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Pensions & Investment Age

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Special Profiles Issue

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\$10 an issue



Top 1,000 Pension Funds

An in-depth look at
the largest 200

Unisys prepares to hire advisers for \$700 million

By Marcia Parker

DETROIT — Executives of Unisys Corp., the company born from the merger of Burroughs Corp. and Sperry Corp., are about to hire new managers for about \$700 million in pension assets previously managed by Sperry's soon-to-be-defunct in-house money management group.

The decision, expected by the end of January, is the first priority for Unisys' pension executives as they combine the highly divergent Burroughs and Sperry funds.

Together, the Sperry and Burroughs employee benefit plans had \$3.9 billion in assets as of Sept. 30.

The merger of the funds is expected to be completed by the end of 1987. David A. White, corporate director-capital management and trust investments, will be designing and implementing the merger, fashioning a new investment philosophy and strategy that will be quite different from those of the individual plans.

Mr. White, who was Burroughs' director-trust investments since 1983, was just appointed head of the combined funds. He is responsible for all the funded benefit plans of Unisys and all of its worldwide subsidiaries. Two people he had worked with have been retained and the rest of his staff is still being assembled.

Burroughs acquired Sperry last

fall and the newly merged company adopted the name Unisys. For now, the funds are being run separately. The merger agreement doesn't preclude Unisys from terminating the pension plans, but the recapitated assets can only be used to pay benefits under the agreement.

Mr. White declined to discuss surplus assets, liabilities or termination value, saying the figures still are being calculated.

In the merger of the funds, he said, "What's most important is

UNISYS

the question of what kind of investment program will fit the new Unisys. That's what I'm looking at. Unisys is a very different company from Burroughs and Sperry separately."

Mr. White said he is in the early stages of drafting the "grand plan" for merging the two pension funds. Burroughs' investment consultant, Rogers, Casey & Barksdale Inc., Stamford, Conn., has been retained for the combined funds. The specific role of the firm hasn't been decided.

He said he had to deal immediately with the \$1 billion that had been managed in-house by Sperry Capital Management Co.,



David White, architect of Unisys' new plan, is looking to hire managers.

New York, because the group is being disbanded, more by default than executive order.

Thomas V. Hirschberg, chairman of Sperry Capital Management, is retiring in February. The other two key professionals have taken new jobs — Jim Price, who was chief trader at Sperry, now is vice president-regional institutional desk at Prudential-Bache Securities, New York; and Eric Leo, who was portfolio manager, now is a portfolio manager at Equitable Investment Management Corp., New York.

Of the \$1 billion that Sperry ran in-house, \$300 million was in an equity index fund with Mr. Hirschberg and Chase Manhattan Bank, New York, as co-trustees. That money has been allocated to Chase, at least for now.

But Mr. White stressed the money could be reallocated later when the new investment plan is implemented.

The other \$700 million is still to be awarded. The money was invested mostly in stocks and bonds, with smaller amounts in short-term instruments and ven-

Continued on page 92

Settlement off? A&P faces vesting for 40,000

By Richard Gillespie

PHILADELPHIA — A federal appeals court here has ordered the Great Atlantic & Pacific Tea Co. to reopen the 3-year-old settlement of its \$315 million in surplus pension plan assets.

The opinion by the 3rd U.S. Circuit Court of Appeals raises the possibility A&P will have to vest as many as 40,000 former employees and pay benefits from a surplus it already booked on its balance sheet. As yet, there are no estimates on how much the ultimate cost could be.

The case will be opened again in U.S. District Court in Newark, N.J., where it first was heard.

The out-of-court settlement, which was approved by an appeals court in 1984, resolved the disposition of \$315 million in surplus assets.

Under the settlement, retirees and former plan participants received \$50 million in benefit increases while the company got \$265 million.

Although it received the blessing of the court, the settlement did not account for claims lodged by a class representing about 47,000 former employees who were laid off as a result of the company closing its operations and shutting stores during the 1960s and 1970s.

In a 22-years beginning in 1962, membership of its pension plan shrank to just 7,700 from 57,000 through store closures and layoffs.

After the settlement was approved, seven former employees who never were vested filed a complaint as the "Epting class." That complaint's dismissal led to the appeal.

Under Section 411 of the Internal Revenue Code, a "partial plan termination" occurs where "a substantial percentage of plan participants are involuntarily separated from plan coverage." If a partial termination occurs and the plan assets are sufficient to fund such otherwise non-vested benefits, affected employees obtain vested rights to their accrued pension benefits.

As a general guideline, the IRS' states a partial termination occurs if a participant turnover of 20% occurs and the participants are not fully vested. "There is a strong possibility that a partial termination has occurred in any year in which participant turnover exceeds 50% prior to the date of termination," an IRS guide states.

The complaint brought against the parties to the settlement and the IRS by the Epting class al-

leged a "partial termination" had taken place.

As a result, the other 47,000 former employees of the supermarket chain who were members of the plan also were entitled to fully vested benefits, the group claimed.

But in such cases, according to the revenue code, the local IRS office is required to make a determination whether those employees should be vested under the partial termination rule.

According to lawyers for the Epting class, the partial termination occurred, but the local IRS office did not issue a determination.

The absence of such a determination generally is held to mean no partial termination has taken place. The U.S. District Court stayed approval of the settlement pending word from the IRS, but approval was granted when word was not received.

The Epting complaint also alleged breach of fiduciary duty by the A&P trustees.

During the appeal, the defendants sought a dismissal claiming no partial termination took place. But according to lawyers for the company, even if a partial termination had occurred, the defendants owed no fiduciary duty to the Epting class.

In sending the case back to District Court, the appellate court ruled U.S. District Judge Frederick B. Lacey failed to rule on key elements regarding the Epting class complaint. It said he also refused to order the IRS to issue a determination because a representative of the IRS had said the agency "stands ready to receive any information presented to it by the parties or their counsel."

The appellate court described the lower court opinion as "rather enigmatic . . . (It) appears that the district court did not intend to dismiss the (Epting class) complaint."

But even beyond the question of whether a termination took place for tax purposes, a termination may have taken place for purposes of the Employee Retirement Income Security Act, according to the opinion.

"(F)actors that remain undecided pending completion of the IRS investigation militate strongly in favor of the conclusion that the order is not final. We are . . . confirmed in our belief that the district court did not intend to end the Epting case."

"We believe . . . that the court did not intend the dismissal to take effect now, and therefore the dismissal is not a final order. The Epting case remains alive meanwhile."

Cash reserves hit '86 high

By Fred Williams

Cash reserves of equity money managers increased to 7.3% as of Dec. 31, the highest level of 1986, according to the INDATA investment analysis service, Southport, Conn.

The 7.3% equity cash position at the end of 1986 compares with 6.9% at the end of 1985 and 7.4% at the end of 1984. The cash position was 6.5% Sept. 30, 1986.

Of the nine money managers contacted by *Pensions & Investment Age*, three increased equity cash and four reduced cash while two managers remained at the same level for the quarter.

While equity cash as measured by the INDATA service was at its year high at the end of the

fourth quarter, a strong equity market during the first half of January pulled more cash into the market.

The record high cash position measured by INDATA was 16.8% in August 1982; the low was 5.4% in September 1976.

No matter what their cash position, most of the managers interviewed believe the bull market will continue through 1987 after a correction sometime in the first half.

Cash reserves at Hibernia National Bank, New Orleans, stood at 10% at the end of the year, down from 10% to 15% at the end of the third quarter, said Robert Rust, vice president and trust investment officer. For Hibernia, that position is fully invested.

"We were waiting for the market to go down (because) there was a lot of bad economic news there in the third quarter. We just couldn't get the market down. That and our belief that interest rates wouldn't be much higher, we thought the market was telling us something and decided to ease in. Since then, though, we have become fully invested," said Mr. Rust.

"This market is overpowered by cash. There is more cash out there than people thought was there, or that people were letting on."

Hibernia has \$750 million in tax-exempt equity assets under management.

Alliance Capital Management Corp., New York, maintained a

Continued on page 92

Highlights

CASH MANAGEMENT

Disbursement disagreement.....	81
Dollar expected to make slight gain.....	81
Cash accounts.....	81

CORPORATE FINANCE

Credit raters see upswing in downgrades.....	83
U.K. seeking sophisticated services.....	84

PROFILES

Benefit payments top contributions.....	15
Corporate funds drop off list.....	15
Indexing skyrockets.....	16
Dedications fall with rates.....	16
Internal assets grow 21.4%.....	16
Profiles of top 100 pension funds.....	28
PBGC's deficit, troubles increased.....	75
18 funds put dynamic hedging to use.....	76

GENERAL NEWS

Pension funds riding the bull.....	4
Pioneering LBO spirit benefits Oregon.....	6
Four stock managers top CDA rankings.....	8

DEPARTMENTS

Current accounts.....	78
Late news.....	96
Market beat.....	87
Money movers.....	88
Opinion.....	12
Washington notebook.....	86

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The P&I Age monthly indexes track the changes in the Standard & Poor's 500 stock index, the Frank Russell Co.'s Russell 3000 stock index, the Ryan Index of fixed-income securities and the Shearson Lehman Government/Corporate bond index.

P&I Age December indexes

	Latest mo.	Year to-date	Trailing 12 mos.
S&P 500	-2.56	18.69	18.69
Russell 3000	-2.7	16.7	16.7
Ryan Index	.04	17.21	17.21
Shearson Lehman Gov't/Corp.	.36	15.59	15.59

Source: Rogers, Casey and Barksdale Inc.

Profiles: The top 200

Benefit payments top contributions

By Chuck Paustian

Benefits paid to retirees outpaced employer contributions almost two-to-one among large corporate pension funds in 1986, primarily the result of early retirement programs, accounting changes and strong investment performance.

Data collected by *Pensions & Investment Age* show benefit payments for 52 large corporate funds increased 23% to about \$9.62 billion in 1986, from \$7.81 billion the previous year. In contrast, employer contributions dropped 33% to about \$5.3 billion in 1986, from \$7.93 billion in 1985.

(The 52 funds provided payment and contribution data both years.)

Pension executives and actuarial consultants most often cited early retirement programs, usually used as part of a corporate streamlining of operations, as the reason for an increase in benefits paid to retirees.

Employer contributions, on the other hand, continued to decline as a result of accounting changes for pension funds and strong investment performance.

While benefit payments rose 23% in the aggregate, a number of companies reported much higher increases.

W. Allen Harrison, assistant treasurer at Exxon Corp., New York, said an early retirement program implemented as part of an operational restructuring during the summer was the reason behind its 161% increase in benefit payments during 1986. Exxon has \$7.55 billion in employee benefit assets.

Many of Exxon's 7,000 domestic employees that opted for early retirement also chose to receive their settlement in a lump sum payment.

An executive of another oil company, who asked not to be identified, said two early retirement programs implemented in 1986 were responsible for benefit payments increasing 233% to \$200 million.

Monsanto Co., St. Louis, with \$3.28 billion in total employee benefit assets, showed a 66% increase in benefits paid to retirees in 1986, "essentially due to early retirement programs that were put into place last year," said William N. Searcy, manager-pension asset management.

Mr. Searcy said the early retirement programs were established in conjunction with a corporate restructuring of operations. "This is all part of the downsizing of the layers of management within companies. You see this in some of the hourly areas as well," said Larry Wiltse, consulting actuary and director of forecasting and planning services at Buck Consultants Inc., New York.

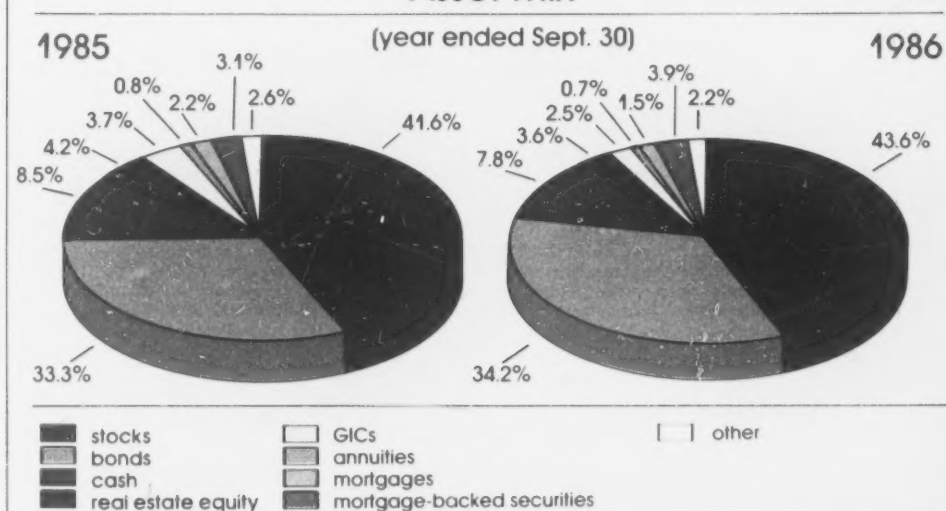
"Based on my own experience, there has been an abnormally high number of special retirement programs," added Julie S. Gordon, an actuarial consultant at Hewitt Associates, Lincolnshire, Ill.

Other actuarial consultants said a maturing work force and the addition of retired lives in the plan through mergers and acquisitions also were responsible for increases in benefit payments.

But many of these same funds have seen employer contributions shrink dramatically. Some companies were able to reduce contributions through the early adoption of the Financial

Continued on page 77

Top 200 Funds Asset mix



Corporate funds drop off list

Mergers, terminations change makeup of top 200

By Marcia Parker

The continuing wave of mergers and terminations of overfunded pension plans sweeping corporate America largely accounted for both the dropouts and the newcomers to *Pensions & Investment Age's* ranking of the 200 largest U.S. employee benefit funds.

Also playing a large role in the positioning was the reduction in contributions by many overfunded corporate funds while public and union funds still were receiving large amounts of assets.

Twelve funds dropped out of the top 200, all of which were corporate. They were replaced by

five corporate, four public and three union funds.

Three funds disappeared from the survey because of acquisitions: RCA Corp., New York, was purchased by General Electric Corp., Stamford, Conn.; Sperry Corp., Blue Bell, Pa., was bought by Burroughs Corp., Detroit; and Getty Oil Co., Los Angeles, was acquired by Texaco Inc., White Plains, N.Y.

In Texaco's case, even though it remained among the top 200, it slipped to 114 from 103, despite the addition of Getty's assets. That's because the company completed a spinoff/termination of the Getty plan in January 1986,

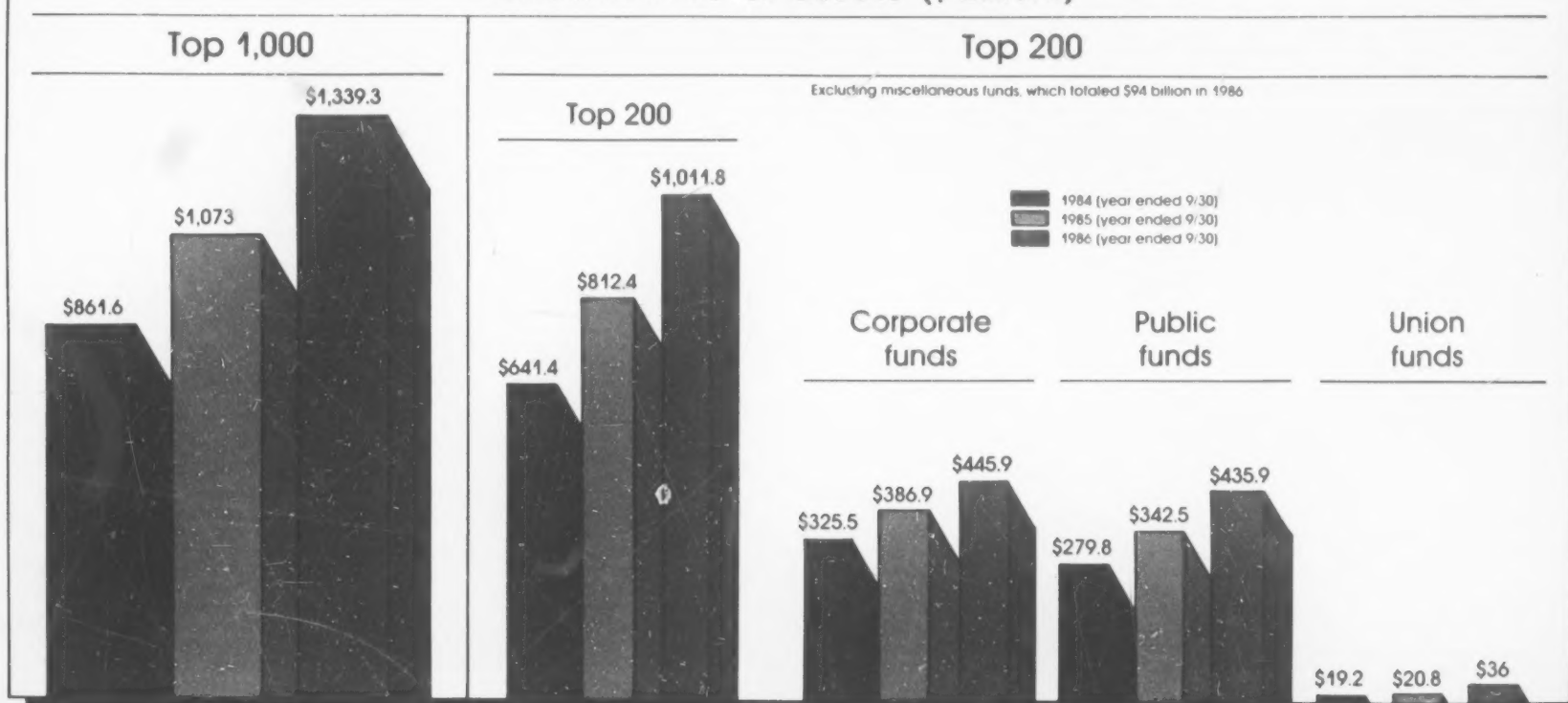
recapturing \$350 million and purchasing \$410 million in non-participating annuities.

(In a spinoff/termination, a company splits the fund in two: one for retirees and the other for active employees. The excess assets are placed in the fund for retirees, which is then terminated. Annuities are purchased to cover the retired lives and the company recoups the surplus.)

The company also offered a lump-sum retirement package, which many employees used. Those factors combined to reduce the amount of Texaco/Getty assets to \$2.22 billion.

Continued on page 74

Growth in total assets (\$ billions)



Indexing skyrockets

Used for 30.08% of stock, 4.86% of bond assets

By Brian Lehrer

About 15% of the \$831.1 billion in defined benefit assets held by the nation's 200 largest pension funds is managed in stock and bond index funds, statistics from *Pensions & Investment Age* reveal.

Of the approximately \$362 billion allocated to stocks by the top 200, 30.08% is indexed; of the approximately \$284 billion allocated to bonds by those pension funds, 4.86% is indexed.

During the year ended Sept. 30, the use of stock and bond indexing among the nation's 200 largest pension funds soared, as pension fund executives welcomed opportunities to match the markets' returns and to lay foundations for portfolio cores.

Stock indexing rose 44% during the 12 months ended Sept. 30, to \$108.9 billion from \$75.62 billion, while bond indexing rose 33.9%, to \$13.8 billion from \$10.31 billion.

(Money managers, on the other hand, reported \$102.34 billion in stock indexing in the Jan. 12 issue of *Pensions & Investment Age*. The top 200 pension funds have more assets indexed because some have internally managed index funds.)

The \$19.36 billion California State Teachers' Retirement System, Sacramento, increased its equity indexing by 212%. The fund has \$6.88 billion — or 72% of its equity assets — in indexed stocks, mostly tracking the Standard & Poor's 500 stock index. Wells Fargo Investment Advisors, San Francisco, is running the indexed assets.

"We made the decision last year to index," said Larry Kurlmel,

chief executive officer. "One reason is that active managers can't beat the markets. It's also cheaper."

Mr. Kurlmel said the fund will probably enter the international stock index market by the third quarter.

The \$22.9 billion General Electric Co. fund, Stamford, Conn., buoyed the amount in indexed equities by \$1 billion, or 62.5%, during the 12 months ended Sept. 30. The \$2.6 billion internally managed indexed fund comprises one-third of its stock investments.

"It forms the core of our equity portfolio that we're assured of getting the market return," said Eugene Bolton, vice president and portfolio manager. "Around that we can structure our active management."

Mr. Bolton said the fund hasn't considered customized (or enhanced) funds yet, but officials are looking at international indexing.

The \$2.6 billion United Air Lines Inc. fund, Chicago, made its first foray into indexing this year by putting \$700 million in an S&P 500 fund.

Dave Dykstra, director of pension assets, said there are no plans to venture into customized or international funds at this point.

Although stock indexing has been in vogue for years, and there are signs the traditional S&P 500 variety may have peaked (*P&I Age*, Jan. 12), bond indexing is just beginning to surge.

As of Sept. 30, 1985, only 18 of *P&I Age*'s largest 200 pension funds used bond indexing, vs. 32 as of Sept. 30, 1986.

One of the newcomers is the \$7.55 billion Exxon Corp. fund, New York, which channeled its

first \$233 million into the Salomon Brothers Broad Investment Grade and the Shearson Lehman Aggregate bond indexes.

In addition, Exxon manages an in-house customized bond fund.

"We felt investment performances were not as good as we expected in certain cases," said W. Allen Harrison, assistant treasurer, explaining Exxon's move into indexing.

Mr. Harrison said fund officials will "play it by ear," but probably will put a "fair emphasis" on bond indexing in the coming year.

While indexing is touted, not all pension funds are so enamored.

"We just philosophically made the decision not to index," said one official at RJR Nabisco Inc., Winston-Salem, N.C., which terminated a \$72 million stock portfolio.

In addition to RJR Nabisco, Unisys Corp., Detroit, and Philip Morris Inc., New York, got out of stock indexing. The Pennsylvania Public School Employees' Retirement System, Harrisburg, Pa., and Unisys got out of bond indexing during the 12 months ended Sept. 30.

Although indexing is burgeoning, pension fund executives have not forsaken their active managers.

"It's just another style that complements your active management," said Joseph C. Pellegrino, director of pension investments for the Aluminum Co. of America, Pittsburgh. The \$2.5 billion fund has \$130 million in the Shearson Lehman Government/Corporate bond index, he said.

California's Mr. Kurlmel said the fund will use its managers to "cushion the downside market."

"We still have faith in our active managers," he said.

Dedications fall with rates

By Joel Chernoff

Creation of new dedicated and immunized bond portfolios by the nation's top 200 pension funds slowed to a crawl in 1986 as lower interest rates made the portfolios less alluring.

What's more, pension fund executives are doubtful they'll be setting up new dedicated or immunized portfolios in the foreseeable future.

"Rates are just not as attractive," said Jack Miller, director-investments, of Indianapolis-based Eli Lilly & Co.'s \$1.43 billion pension fund. The average yield-to-maturity dropped to 7.8% as of Sept. 30, 1986, from 10.1% the year before, according to the Shearson Lehman Government/Corporate bond index.

The value of previously existing portfolios climbed 22% to \$28.1 billion as of Sept. 30, from \$23 billion 12 months earlier, boosted by sharply declining interest rates. But the value of pension liabilities to which the assets were matched generally rise by a similar amount, pension fund executives said.

The 22% hike is net of payments to cover benefits for retirees, suggesting the gross return was significantly higher.

Dedicated and immunized portfolios gained popularity in the early 1980s because pension funds were able to lock in high interest rates.

Basically, a dedicated bond portfolio involves matching cash flows from bonds with those of a

known set of liabilities, usually those for retirees. Immunization, a form of dedication, involves matching the duration of a bond portfolio (the time it takes to recover half the present value of a bond portfolio) against the duration of liabilities to protect against interest-rate fluctuations.

The locked-in high interest rates enabled pension funds to raise their interest rate assumptions, thus lowering pension expense and contributions.

Data drawn from *Pensions & Investment Age*'s annual survey of the top 200 pension funds gives a rough gauge of trends in the dedicated and immunized bond area.

(Certain inconsistencies in the data exist. Several funds, including North American Philips Corp., New York, and Eaton Corp., Cleveland, dropped from the list because they no longer were large enough to be included in the top 200, while others, such as Eli Lilly and National Intergroup Inc., Pittsburgh, were added because of their increased relative size.)

(In addition, a few funds listed last year with dedicated or immunized portfolios were merged into other companies. Inconsistencies in data provided by some corporations also accounted for some problems in measuring year-to-year changes.)

While several pension executives said they would not be interested in establishing new dedicated or immunized portfolios in today's lower interest rate environment, they said their current portfolios did their job.

Southwestern Bell Corp.'s \$6.2 billion pension fund started a \$1.1 billion dedicated bond portfolio in summer of 1985 to lock in a 12.21% interest rate, said Roger Wohler, assistant treasurer-corporate finance for the St. Louis-based company.

The bond portfolio was part of a larger effort to change the fund's actuarial assumptions, which taken together, reduced pension expense by more than \$60 million a year, he said.

The portfolio, which was valued at \$1.42 billion as of Sept. 30, has been rebalanced several times to prevent having callable issues, Mr. Wohler explained.

Rebalancing has not caused a problem because the portfolio's managers — Jennison Associates Capital Corp., Boston, and Mercantile Trust Co., St. Louis — have sold off vulnerable issues far enough in advance of the market discounting their value, he said.

The fund with the largest amount of dedicated assets, the \$7.57 billion Western Conference of Teamsters Pension Trust, Seattle, also caught interest rates before their recent decline, establishing the third in a series of dedicated portfolios between late 1985 and early 1986. The fund's first dedication was done in 1982.

The most recent dedication, plus strong market gains, boosted the amount of Teamsters assets invested in such portfolios to \$4.5 billion, up 76.5% from \$2.55 billion the year before.

By allowing actuarial assumptions

Continued on page 74

Profile statistics at a glance

(\$ billions)

	1986	1985
Top 1,000 assets	1,339.3	1,073
Top 200 assets	1,011.8	812.4
Top 100 assets	845.7	675.6
Top 50 assets	660.1	523.7
Top 25 assets	479.3	377.6
Top 200 defined benefit	831.1	648.5
Top 200 defined contribution	92.2	75.9
Top 200 profit-sharing	17.4	12.8
Top 200 thrift/401(k)	58.1	48.1

Top 200 fund statistics

(\$ billions)

	1986	1985
Internal mgmt	411.9	339.1
Stock index funds	108.9	75.6
Bond index funds	13.8	10.3
Real estate equity	26.2	23.3
Mortgages	30.3	36.8
Mortgage-backed securities	50.5	30.8
GICs	10.5	12
Overseas	24.5	11.7
Venture capital	3.3	2.6
Dedication/immunization	29.4	23
Oil & gas	0.8	0.6
LBOs	2.8	NA
Contribution paid	40.3	42.4
Benefits paid	36.9	31.1
Portfolio insurance	8.6	NA

Number of top 200 funds using alternative investments

	1986	1985
Internal mgmt	121	117
Stock index funds	100	77
Bond index funds	32	18
Real estate equity	130	121
Mortgages	63	70
Mortgage-backed securities	98	67
GICs	62	62
Overseas	93	78
Venture capital	75	63
Dedication/immunization	37	42
Oil & gas	22	17
LBOs	26	NA
Stock index futures	63	45
Fixed-income futures	46	38
Stock options	62	49
Fixed-income options	22	18
Portfolio insurance	19	NA

Internal assets grow 21.4% during period

By Fred Williams

Assets managed internally by the nation's largest pension funds grew 21.4% during the year ended Sept. 30, to \$411.9 billion from \$339.1 billion in 1985.

As of Sept. 30, 121 funds reported internally managed assets, compared with 117 last year.

Although precise breakouts weren't available, it appeared internal managers took advantage of the bull stock market, moving more assets into equities and holding steady on, or even decreasing, their internal fixed-income allocations.

As a percentage of the total employee benefit assets of the top 200, internally managed pension assets dropped to 40.7% from 41.7% a year earlier.

The Teachers Insurance and Annuity Association — College Retirement Equities Fund, New York, topped the list of funds with internal management, reporting all of its assets — \$52.3 billion — under in-house control as of Sept. 30, up 30.8% from \$40 billion a year earlier.

As in previous years, public

pension funds dominated the list, taking eight of the top 10 spots.

The only corporate fund among the top 10 was General Electric Co., with \$18.8 billion managed in-house. That amount makes up the Stamford, Conn., company's entire defined benefit plan.

Of the top 20, only three other corporate funds joined GE: E.I. du Pont de Nemours & Co. Inc., Wilmington, Del., with \$9.97 billion of its total \$12.218 billion in employee benefit assets managed in-house; USX Corp., Pittsburgh, with \$9 billion internally, all of its defined benefit assets; and IBM, with \$5.9 billion of its \$16.64 billion defined benefit plan managed in-house.

Most of the funds on the list this year also were there last year, although rankings changed.

Newcomers include the Pension Reserves Investment Trust, Boston; U S WEST Inc., Englewood, Calif.; and the Chicago Employees Annuity & Benefit Fund.

PRIT, which only received its first allocation in 1984 and was not included in previous surveys, ranked reported \$54 million of its

Continued on page 76

Growing 'baby Bells' follow separate paths

By Barry E. Burr

In asset size, growth and new investments, the seven Bell operating companies comprised the most prominent group of defined benefit pension funds last year.

In total assets for all employee benefit plans, the baby Bells had an aggregate \$62.9 billion as of Sept. 30, up 27.5% from \$49.34 billion a year earlier. In defined benefit assets alone, the seven had \$54.88 billion as of Sept. 30, up 26.3% from the \$43.47 billion a year earlier.

NYNEX Corp., New York, had the largest of the defined benefit funds among the Bells, with \$10.09 billion, while Southwestern Bell Corp., St. Louis, had the smallest, with \$5.47 billion, although its figures were of June 30, while the other funds reported Sept. 30 data.

San Francisco-based Pacific Telesis Group's defined benefit fund grew the fastest in the year ended Sept. 30, up 34.2% to \$7.6 billion. Philadelphia-based Bell Atlantic Corp.'s fund grew the slowest, up 21.4% to \$8.5 billion.

The baby Bells — all spun off in the divestiture of American Telephone & Telegraph Co., New York, several years ago — are hardly united in their pension fund investment approach. And they don't compare themselves to their sibling companies.

Said Roger Wohler, Southwestern Bell's assistant treasurer-corporate finance: "We don't look at the other regionals... I don't have access to their figures. We are all moving in different direc-

tions. There are other large pension funds out there we could just as well compare ourselves to."

The year ended Sept. 30 was an active year for the seven Bell operating companies:

- American Information Technologies Corp., Chicago, and Pacific Telesis are moving into internal management. Ameritech plans to run \$1 billion in-house, while PacTel is managing \$280 million internally. The two are the only Bell funds to run assets in-house, except for some venture capital holdings by U S WEST Inc., Englewood, Colo.

- U S WEST increased its commitment to oil and gas to \$50 million and hired a manager to run short-term investments, the only baby Bell with such a manager.

- NYNEX and Southwestern Bell both moved into international and equity real estate investments for the first time, joining at least four other Bell funds in both asset classes.

Some notable similarities and differences appear in strategy:

- Investing passively is a major theme of at least five Bell funds.

- Ameritech, alone among the Bells, devotes a larger share of its assets to fixed income than to equities. It has only 46% in stocks, compared with a range of 65% to 58% for other Bell companies.

- PacTel had the largest allocation to international investments — 15%, or \$1.14 billion, of its total \$7.6 billion pension fund, as of Sept. 30. Ameritech had \$950 million about evenly divided between equities and fixed income and U S West had \$570 million, mostly in equities.

The Bells' pension funds undertook major investment initiatives during the year ended Sept. 30.

Ameritech, for example, swung its asset allocation to favor fixed income over equities, pulling \$500

million from its stock managers to fund the program.

Ameritech officials placed a bond index fund temporarily with National Investment Services of America Inc., Milwaukee, although it plans to move it to Lincoln Capital Management Co., Chicago.

Ameritech also is setting up a \$1 billion in-house Standard & Poor's 500 stock index fund. Ameritech had about \$500 million in-house in December and expects to fund the other half of the stock index portfolio earlier this year. The money for the in-house fund also came from equity managers.

In another big change, Ameritech's international investments increased 121% in the year ended Sept. 30. Glenn A. Dever, Ameritech Supervisor-investment analysis, attributed the rise to performance rather than more funding. He said Ameritech has no plans to make any additional funding in international in 1987.

NYNEX moved into international investments for the first time, according to sources. In addition, NYNEX made its first move into real estate outside its Telephone Real Estate Equity Trust holdings, inherited in the

breakup of American Telephone & Telegraph Co.'s pension fund.

Southwestern Bell made its first commitments to real estate equity outside its TREET holdings and to venture capital.

In addition, it began a securities lending program with Republic-Bank Dallas, its master trustee.

The new investment programs came after Southwestern Bell closed 1985 with two major initiatives — initial international investments and a dedicated bond portfolio.

U S WEST raised its international investments more than tenfold and increased its venture capital commitment more than 300%.

In addition, its real estate equity investments rose to \$530 million from \$215 million in the 15 months from Sept. 30, 1985. That increase includes a recent \$240 million real estate development in Jersey City, N.J., in which U S WEST will provide \$100 million in equity, assume a \$60 million loan and seek \$80 million in additional loans for the rest of the financing.

Also, U S WEST nearly doubled its dedicated bond portfolio to \$2.026 billion from \$1 billion in

Continued on page 77

Top 200 asset mix

Corporate

	1986 %	1985 %
Stocks	50.1	48.5
Bonds	27.7	25.6
Cash	7.9	8.1
Real estate equity	4.5	5.3
GICs	3.4	5.4
Annuities	1.3	1.2
Mortgages	0.5	1
Mortgage-backed securities	1	1
Other*	3.6	3.9

Public

	1986 %	1985 %
Stocks	33.4	30.1
Bonds	44.2	46.5
Cash	7.8	8.9
Real estate equity	2.3	2.5
GICs	0.4	0.3
Annuities	0	0.3
Mortgages	2.9	3.8
Mortgage-backed securities	8.3	6.5
Other*	0.7	1.1

Union

	1986 %	1985 %
Stocks	36.1	36.9
Bonds	39.2	32.7
Cash	7.9	12.6
Real estate equity	3.9	3.7
GICs	2.9	5.5
Annuities	0	NA
Mortgages	1.6	2.2
Mortgage-backed securities	4	4.2
Other*	4.4	2.2

* Other includes venture capital, oil and gas and misc. investments.

Southwestern ready for '87

By Barry B. Burr

ST. LOUIS — In 1987, Roger Wohler, Southwestern Bell Corp.'s assistant treasurer-corporate finance, expects to look at commingled real estate funds for the \$5.47 billion defined benefit pension fund.

In addition, he said the fund, which already has a third of its assets in indexed stocks, plans to look at other passive products, especially those index strategies targeted to capture particular segments of the market.

In another area, he said he has discussed performance fees with all managers, but hasn't adopted the compensation method yet, cautioning against undesired risks.

"We're cognizant of the dangers of setting up an incentive structure that might encourage managers to take excessive short-term risks," Mr. Wohler said. "We haven't come up with a formula that works."

On the practice of paying for services by channeling stock trading commissions to specific brokers, he said, "We're using soft dollars to a small degree. It's on a voluntary basis with managers, and only with brokers the managers are dealing with anyway. We don't insist managers meet a quota. Best execution can be the only criterion for doing a transaction."

As long as execution isn't harmed, he said, "it can save the fund from paying a fee on services," from using "money that would be paid out of the fund."

Its consultant, Buck Pension Fund Services Inc., New York, is paid with soft dollars. In all, he said, less than 10% of the fund's fees are paid in soft dollars.

Also, the fund is considering lending securities in the international arena — an area sorely needing such services, he said.

Continued on page 76

Bottom 800 asset mix

Corporate

	1986 %	1985 %
Stocks	49.9	47.7
Bonds	25.8	20.2
Cash	10	9.7
Real estate equity	3.8	3.8
GICs	5.1	12.7
Mortgage-backed securities	0.7	*
International	2.5	1.3
Options	0.1	*
Futures	0.2	*
Venture capital	0.4	*
Oil & gas	0.1	*
Other*	1.4	4.6

Public

	1986 %	1985 %
Stocks	37.4	36.1
Bonds	38	40.7
Cash	11.2	12.4
Real estate equity	3.6	3.5
GICs	1.2	2.3
Mortgage-backed securities	3.7	*
International	0.4	NA
Options	0.1	*
Futures	0	*
Venture capital	0.2	*
Oil & gas	0	*
Other*	4.2	5

Union

	1986 %	1985 %
Stocks	29.5	26
Bonds	37.6	39.7
Cash	10.3	10.6
Real estate equity	4	3.1
GICs	5.7	6.2
Mortgage-backed securities	7.1	*
International	0.4	0.1
Options	0.2	*
Futures	0	*
Venture capital	0.2	*
Oil & gas	0	*
Other*	5	14.3

* Other includes mortgages and annuities. In 1985 it also included mortgage-backed securities, options, futures, venture capital and oil and gas.

Index of charts and tables

Funds 1-200	20
Funds 201-1,000	22
Largest corporate funds	34
Largest public funds	34
Largest union funds	36
Largest misc. funds	36
Largest defined benefit	40
Largest profit-sharing plans	46
Mortgages	54
Mortgage-backed securities	56
Real estate equity	58
Indexed bonds	62
Indexed stocks	62
Internal management	64
International	68
Oil & gas	70
Venture capital	70
Portfolio insurance	71
Dedicated/immunized	72
Leveraged buy-outs	72
GICs	72
Options	73
Stock index futures	74
Fixed-income futures	74

Top 200 pension funds/sponsors

Assets in \$ millions

1. TIAA-CREF	52,300	68. Mobil Oil Corp.	3,900	135. Raytheon Co.	1,840
2. California Public Employees	37,700	69. General Dynamics Corp.	3,900	136. Los Angeles City Employees	1,822
3. General Motors Corp.	32,900	70. Unisys Corp.	3,880	137. Louisiana State Employees	1,806
4. New York State Common Fund	31,533	71. Caterpillar Inc.	3,617	138. Southern Baptist Convention	1,767
5. N.Y.C. Retirement Systems	30,839	72. Massachusetts State Employees	3,475	139. Southern California Edison	1,756
6. AT&T Co.	30,340	73. Iowa Public Employees	3,341	140. Presbyterian Church U.S.A.	1,750
7. General Electric Co.	22,891	74. Monsanto	3,280	141. Amco Inc.	1,712
8. New York State Teachers	20,235	75. Missouri School Retirement	3,278	142. Citicorp	1,701
9. California State Teachers	19,361	76. Pacific Gas & Electric Co.	3,275	143. Commonwealth Edison Co.	1,687
10. IBM Corp.	18,191	77. Chrysler Corp.	3,260	144. Goodyear Tire & Rubber Co.	1,658
11. N.J. Division of Investment	16,901	78. Union Carbide Corp.	3,200	145. Navistar International Corp.	1,655
12. Ford Motor Co.	14,600	79. RJR Nabisco	3,164	146. Inland Steel Industries Inc.	1,652
13. Michigan State Employees	13,580	80. Hawaii State Employees	3,009	147. Massachusetts PRRT	1,646
14. Ohio Public Employees	13,567	81. Procter & Gamble Co.	2,984	148. FMC Corp.	1,644
15. Wisconsin Investment Board	13,500	82. Illinois Municipal Retirement Fund	2,980	149. Bakery & Confectionery Workers	1,630
16. Texas Teachers	13,198	83. Bethlehem Steel Corp.	2,913	150. Hospital Health Care Employees	1,620
17. Ohio Teachers Retirement System	12,484	84. American Airlines	2,892	151. Oklahoma Teachers	1,590
18. E.I. du Pont de Nemours & Co.	12,218	85. Alaska State Retirement Systems	2,857	152. International Paper Co.	1,587
19. NYNEX Corp.	11,962	86. Metropolitan Life Insurance Co.	2,828	153. Travelers Insurance Co.	1,583
20. Florida Board of Administration	11,544	87. Kansas Public Employees	2,773	154. National Rural Electric Co-op	1,550
21. Amertech	10,478	88. Detroit Retirement Systems	2,742	155. Standard Oil Co.	1,535
22. Pennsylvania School Employees	10,078	89. San Francisco Employees	2,723	156. GenCorp Inc.	1,525
23. North Carolina Retirement	10,003	90. Mississippi Public Employees	2,716	157. Philip Morris Inc.	1,524
24. Bell Atlantic Corp.	9,500	91. Northrop Corp.	2,702	158. International Operating Engineers	1,515
25. USX Corp.	9,400	92. Atlantic Richfield	2,700	159. Florida Power & Light Co.	1,509
26. GTE Corp.	8,962	93. Utah State Retirement Board	2,688	160. Los Angeles Water & Power	1,500
27. BellSouth Corp.	8,750	94. Louisiana Teachers	2,608	161. McDermott International Inc.	1,496
28. Minnesota State Board	8,658	95. UAL Inc.	2,600	162. Arkansas Teacher Retirement	1,489
29. Pacific Telesis Group	8,500	96. Delta Air Lines Inc.	2,550	163. Rhode Island State & City	1,483
30. Georgia State Retirement Systems	8,382	97. Textron Inc.	2,502	164. PPG Industries Inc.	1,476
31. University of California	8,378	98. General Foods Corp.	2,500	165. Eli Lilly and Co.	1,425
32. Washington Investment Board	8,100	99. Illinois Universities	2,483	166. Bechtel Power Corp.	1,430
33. Teamsters Western Conference	7,571	100. ITT Corp.	2,482	167. K mart Corp.	1,399
34. Exxon Corp.	7,550	101. United Methodist Church	2,416	168. Southern New England Telephone	1,375
35. U.S. WEST Inc.	7,350	102. Grumman Corp.	2,406	169. Hercules Inc.	1,367
36. Los Angeles County	7,293	103. J.C. Penney Co.	2,356	170. Philadelphia Municipal	1,358
37. Boeing Co.	7,200	104. LTV Corp.	2,354	171. Texas Municipal Retirement	1,350
38. Teamsters Central States	7,070	105. Kentucky Teachers Retirement	2,325	172. Teledyne	1,346
39. Sears Roebuck & Co.	6,784	106. Xerox Corp.	2,318	173. New Mexico Educational Board	1,341
40. Maryland State Retirement	6,778	107. Deere & Co.	2,307	174. Motorola	1,326
41. Pennsylvania State Employees	6,730	108. Consolidated Edison Co.	2,297	175. New York Life Insurance Co.	1,317
42. Eastman Kodak Co.	6,631	109. Chicago Teachers	2,281	176. Pan American World Airways Inc.	1,307
43. Allied-Signal Inc.	6,600	110. Illinois State Board	2,280	177. Texas County & District	1,271
44. Oregon Public Employees	6,522	111. Trans World Airlines	2,265	178. Teamsters New England	1,265
45. Colorado Public Employees	6,322	112. Ohio Police and Fire	2,237	179. Indiana State Teachers	1,260
46. Virginia Retirement System	6,296	113. Minn. Mining & Manufacturing Co.	2,221	180. American Stores Co.	1,254
47. Southwestern Bell Corp.	6,208	114. Texaco Inc.	2,219	181. Episcopal Church Pension Fund	1,250
48. United Technologies Corp.	6,108	115. Los Angeles Fire and Police	2,205	182. New Mexico Public Employees	1,243
49. Lockheed Corp.	6,085	116. World Bank	2,200	183. West Virginia State	1,230
50. Rockwell International	5,986	117. Honeywell Inc.	2,163	184. CIGNA Corp.	1,221
51. Illinois Teachers	5,952	118. Martin Marietta Corp.	2,123	185. Unocal Corp.	1,207
52. Chevron Corp.	5,898	119. Kentucky Retirement Systems	2,108	186. Houston City, Fire and Police	1,203
53. United Nations	5,884	120. Dow Chemical Co.	2,080	187. Delaware State	1,200
54. Shell Oil Co.	5,811	121. Eastern Air Lines & Pilots	2,074	188. IAM National Pension Fund	1,196
55. McDonnell Douglas Corp.	5,735	122. Southern Co.	2,060	189. Milwaukee City Employees	1,187
56. Arizona State Retirement System	5,507	123. Nevada Public Employees	2,048	190. S. Calif. Food Commercial Workers	1,181
57. Alabama Retirement Systems	5,454	124. Tennessee Valley Authority	2,028	191. Chicago Employees	1,170
58. Tennessee Consolidated	5,340	125. Indiana Public Employees	2,020	192. Abbott Laboratories	1,160
59. Aluminum Co. of America	5,000	126. TRW Inc.	2,005	193. Cooper Industries Inc.	1,150
60. South Carolina Retirement System	4,996	127. Conoco Inc.	1,987	194. Hewlett-Packard	1,150
61. Connecticut Trust Funds	4,819	128. Boilemakers-Blacksmiths	1,984	195. National Intergroup Inc.	1,140
62. Westinghouse Electric Corp.	4,800	129. Tenneco Inc.	1,941	196. Baltimore Employees	1,140
63. Prudential Insurance Co.	4,507	130. Aetna Life & Casualty Co.	1,936	197. Halliburton Savings Plan	1,130
64. Texas Employees Retirement	4,310	131. Dart & Kraft Inc.	1,877	198. Continental Can Co.	1,104
65. Hughes Aircraft Co.	4,300	132. Owens-Illinois	1,875	199. Ashland Oil Inc.	1,100
66. UMW Health & Retirement	4,223	133. Sun Co.	1,856	200. Idaho Public Employees	1,100
67. Amoco Corp.	4,179	134. Ohio School Employees	1,854	Total	1,011,000

Ranking of funds/sponsors 201-1,000

Rank	Fund/sponsor	Location	Assets	Rank	Fund/sponsor	Location	Assets	Rank	Fund/sponsor	Location	Assets
201	Maine State Retirement	Augusta	1,100	292	Deseret Mutual Benefit	Salt Lake City	782	383	Reynolds Metals	Richmond, Va.	572
202	United Parcel Service	Greenwich, Conn.	1,100	293	General Public Utilities	Parsippany, N.J.	782	384	Carpenters, N.Y.C.	New York	570
203	Wyoming Retirement	Cheyenne	1,100	294	Elec. Products Ind.	Flushing, N.Y.	779	385	Sherwin-Williams	Cleveland	569
204	Army Air Force Exch.	Dallas	1,092	295	Greyhound	Phoenix, Ariz.	773	386	Emhart	Farmington, Conn.	568
205	Pacific Lighting	Los Angeles	1,091	296	Ethyl	Richmond, Va.	771	387	Conoco	Wilmington, Del.	561
206	Sheet Metal Workers	Washington	1,088	297	Middle South Utilities	New Orleans	770	388	Operating Engineers 3	San Francisco	561
207	Johnson & Johnson	N. Brunswick, N.J.	1,087	298	Dana	Toledo, Ohio	767	389	Morton Thiokol	Chicago	558
208	Kimberly-Clark	Dallas	1,086	299	Georgia Pacific	Atlanta	766	390	May Department Stores	St. Louis	557
209	Carpenters, N. Calif.	Oakland	1,080	300	Norfolk Southern	Roanoke, Va.	766	391	Denver Public School	Denver	551
210	Times Mirror	Los Angeles	1,069	301	Laborers, Texas Nat'l	Dallas	762	392	Food Comm. Wrks 27	Baltimore	551
211	Amer. Electric Power	Columbus, Ohio	1,060	302	General Mills	Minneapolis	761	393	Coastal	Houston	550
212	John Hancock Mutual	Boston	1,058	303	Manville	Denver	756	394	Dallas City Employees	Dallas	550
213	American Can	Greenwich, Conn.	1,053	304	Public Service E&G	Newark, N.J.	750	395	Nat'l Auto. Sprinkler	Silver Spring, Md.	549
214	Chicago Policemen	Chicago	1,050	305	Singer	Stamford, Conn.	740	396	Pennsylvania P&L	Allentown	548
215	North American Philips	New York	1,048	306	ABC Ministers Miss.	New York	738	397	Contra Costa County	Martinez, Calif.	547
216	BATUS	Louisville, Ky.	1,046	307	Contel	Atlanta	737	398	Quaker Oats	Chicago	546
217	Texas Utilities	Dallas	1,045	308	Ingersoll-Rand	Woodcliff Lake, N.J.	733	399	Squibb	Princeton, N.J.	542
218	Bristol-Myers	New York	1,044	309	Weyerhaeuser	Tacoma, Wash.	730	400	Dayton Hudson	Minneapolis	540
219	Michigan Municipal	Lansing	1,040	310	Chicago Transit	Chicago	722	401	Battelle Memorial Inst.	Columbus, Ohio	536
220	Arkansas Public Empl.	Little Rock	1,031	311	Orange County	Santa Ana, Calif.	717	402	Borden	Columbus, Ohio	535
221	Financial Institutions	White Plains, N.Y.	1,030	312	Consolidated Rail	Philadelphia	712	403	Boston City Retirement	Boston	531
222	Retail Clerks N. Calif.	Walnut Creek	1,028	313	Hoffman-LaRoche	Nutley, N.J.	710	404	Gillette	Boston	529
223	CBS	New York	1,020	314	BASF	Parsippany, N.J.	708	405	Nat'l Telephone Co-op	Washington	528
224	Fed. Depart. Stores	Cincinnati	1,020	315	Coca-Cola	Atlanta	705	406	Peoples Energy	Chicago	526
225	Dun & Bradstreet	New York	1,015	316	Crown Zellerbach	San Francisco	705	407	Mead	Dayton, Ohio	525
226	United Telecom	Kansas City, Mo.	1,011	317	Lutheran Church Amer.	Minneapolis	705	408	Ralph M. Parsons	Pasadena, Calif.	525
227	Burlington Northern	Seattle	1,010	318	USG	Chicago	705	409	Amalgamated Life	New York	524
228	Champion International	Stamford, Conn.	1,010	319	Brown & Root	Houston	704	410	Louisiana School	Baton Rouge	522
229	Sandia Nat'l Labs	Albuquerque, N.M.	1,008	320	Northeast Utilities	Berlin, Conn.	702	411	Container Corp. Amer.	Chicago	521
230	Chel Pierre	Traverse City, Mich.	1,007	321	E-Systems	Dallas	700	412	San Jose Retirement	San Jose, Calif.	520
231	NCR	Dayton, Ohio	1,006	322	N.J. Hospital Assoc.	Princeton, N.J.	700	413	Navy Resale Systems	Staten Island, N.Y.	518
232	Oper. Eng. 302-612	Seattle	1,005	323	Liberty Mutual Insur.	Boston	699	414	Primark	Detroit	518
233	American Bar Assoc.	Chicago	1,001	324	Minneapolis Employees	Minneapolis	696	415	Teamsters Local 705	Chicago	514
234	American Cyanamid	Wayne, N.J.	1,000	325	Armstrong World Ind.	Lancaster, Pa.	695	416	Milwaukee County	Milwaukee	513
235	Kaiser Permanente	Oakland, Calif.	1,000	326	Polaroid	Cambridge, Mass.	695	417	Washington Post	Washington	513
236	Montana Retirement	Helena	1,000	327	IC Industries	Chicago	694	418	Harris	Melbourne, Fla.	512
237	Okla. State Employees	Oklahoma City	1,000	328	San Diego County	San Diego	690	419	Household International	Prospect Hgts., Ill.	506
238	YMCA Retirement Fund	New York	1,000	329	A.J. Bayless Markets	Phoenix, Ariz.	688	420	Milliken	Spartanburg, S.C.	506
239	American Standard	New York	998	330	Painters, International	Washington	686	421	Graphic Comm. Int'l	Washington	504
240	MHT	New York	998	331	Budd	Troy, Mich.	683	422	Baltimore County	Towson, Md.	503
241	Northwest Airlines	St. Paul, Minn.	998	332	S. Calif. Carpenters	Los Angeles	682	423	Miles Laboratories	Elkhart, Ind.	503
242	Warner Lambert	Morris Plains, N.J.	998	333	Consolidated Nat'l Gas	New York	668	424	Ohio Edison	Akron, Ohio	503
243	Missouri State Empl.	Jefferson City	990	334	Cincinnati Retirement	Cincinnati	667	425	Vermont State	Montpelier	503
244	James River	Richmond, Va.	986	335	CSX	Richmond, Va.	663	426	Timken	Canton, Ohio	500
245	Upjohn	Kalamazoo, Mich.	985	336	Marsh & McLennan	New York	663	427	Combustion Engineer	Stamford, Conn.	498
246	MEBA	Baltimore	982	337	Allied Stores	New York	662	428	Houston Industries	Houston	497
247	Pfizer	New York	980	338	ICMA Retirement	Washington	662	429	Wheeling-Pittsburgh	Pittsburgh	493
248	NADA Retirement Trust	McLean, Va.	971	339	Blue Cross Blue Shield	Chicago	659	430	Deluxe Check Printers	St. Paul, Minn.	492
249	Texas Instruments	Dallas	969	340	Lutheran Mo. Synod	St. Louis	658	431	Midwest Operating Eng.	Countryside, Ill.	492
250	Baltimore Employees	Baltimore	968	341	U.S. Air	Washington	657	432	State Farm Insurance	Bloomington, Ill.	484
251	N. Calif. Food Industry	Walnut Creek	950	342	American Red Cross	Washington	655	433	IBEW	Washington	483
252	Santa Fe S. Pacific	Chicago	950	343	Northern States Power	Minneapolis	653	434	Memphis City	Memphis, Tenn.	483
253	Eaton	Cleveland	945	344	United Church Boards	New York	644	435	Operating Eng. 150	Countryside, Ill.	482
254	Niagara Mohawk Power	Syracuse, N.Y.	943	345	N. Calif. Operating Eng.	San Francisco	640	436	Sundstrand	Rockford, Ill.	482
255	Merck	Rahway, N.J.	939	346	Occidental Petroleum	Los Angeles	636	437	Motion Picture Industry	Studio City, Calif.	479
256	W.R. Grace	New York	938	347	Time	New York	635	438	Teamsters Affiliates	Washington	479
257	Columbia Gas System	Wilmington, Del.	937	348	Schlumberger	New York	630	439	ICI Americas	Wilmington, Del.	474
258	Rohm and Haas	Philadelphia	930	349	Southland	Dallas	626	440	Uniroyal	Middlebury, Conn.	473
259	Duke Power	Charlotte, N.C.	929	350	Westvaco	New York	626	441	Christian Church	Indianapolis	469
260	Arizona Public Safety	Phoenix	928	351	Wayne County	Detroit	625	442	City Investing	New York	469
261	Digital Equipment	Acton, Mass.	928	352	Int'l Longshoremen	New York	623	443	Teamsters N.Y. State	Utica	467
262	Philadelphia Electric	Philadelphia	918	353	Farmland Industries	Kansas City, Mo.	622	444	Steelcase	Grand Rapids, Mich.	465
263	N.H. Retirement	Concord, N.H.	916	354	Alameda County	Oakland, Calif.	620	445	Wis. Electric Power	Milwaukee	463
264	S. Dakota Retirement	Pierre	908	355	Sacramento County	Sacramento, Calif.	619	446	Phelps Dodge	New York	462
265	Delaware State	Dover	890	356	Beatrice Companies	Chicago	618	447	University of Pa.	Philadelphia	462
266	Cook County Annuity	Chicago	886	357	Central Pa. Teamsters	Reading	616	448	Pennzoil	Houston	458
267	SmithKline Beckman	Philadelphia	880	358	San Diego City	San Diego	616	449	ASARCO	New York	456
268	District of Columbia	Washington	875	359	Owens Corning Fiber	Toledo, Ohio	614	450	Food Comm., Retail	Atlanta	456
269	Scott Paper	Philadelphia	870	360	Pillsbury	Minneapolis	610	451	Sara Lee	Chicago	455
270	Food Comm. Wrks	Chicago	869	361	Winn Dixie Stores	Jacksonville, Fla.	610	452	Amer. Fed. Musicians	New York	454
271	Whirlpool	Benton Harbor, Mich.	867	362	Campbell Soup	Camden, N.J.	607	453	Seafarers International	Camp Springs, Md.	453
272	Corning Glass Works	Corning, N.Y.	860	363	Baxter Travenol	Deerfield, Ill.	605	454	Hanson Industries	Iselin, N.J.	452
273	Hallmark Cards	Kansas City, Mo.	860	364	Masters Mates Pilots	Linthicum, Md.	605	455	New England Electric	Westborough, Mass.	452
274	Operating Eng. 12	Pasadena, Calif.	850	365	Teamsters Alaska 959	Anchorage, Alaska	605	456	Laborers, Const. Gen'l	Forest Park, Ill.	451
275	Ole	Stamford, Conn.	849	366	Centerior Energy	Independence, Ohio	604	457	Montgomery County	Rockville, Md.	451
276	Liton Industries	Beverly Hills, Calif.	841	367	Mass. Bay Transit	Boston	604	458	Dresser	Dallas	450
277	Ralston Purina	St. Louis	833	368	Central and South West	Dallas	603	459	Laborers International	Washington	450
278	R.R. Donnelley & Sons	Chicago	830	369	Air Products & Chem.	Allentown, Pa.	600	460	Service Empl. 32B-32J	New York	450
279	Coil Industries	New York	829	370	Kellogg	Battle Creek, Mich.	598	461	Union Camp	Wayne, N.J.	450
280	Borg-Warner	Chicago	826	371	Baltimore G&E	Baltimore	595	462	H.J. Heinz	Pittsburgh	449
281	Union Pacific	New York	818	372	Savings Institutions	New York	594	463	Celanese	New York	448
282	CIBA-Geigy	Ardsley, N.Y.	815	373	Kaiser Alum. & Chem.	Oakland, Calif.	591	464	Fairfax County	Fairfax, Va.	448
283	Control Data	Minneapolis	815	374	Virginia Power	Richmond	583	465	Lumber Workers	Portland, Ore.	448
284	Cummins Engine	Columbus, Ind.	812	375	Capital Cities ABC	New York	581	466	Wickes Companies	Santa Monica, Calif.	447
285	Boise Cascade	Boise, Idaho	801	376	Burlington Industries	Greensboro, N.C.	580	467	Fruehauf	Detroit	446
286	Enron	Houston	800	377	Anheuser-Busch	St. Louis	579	468	Amp	Harrisburg, Pa.	445
287	Montgomery Ward	Chicago	800	378	Cincinnati Bell	Cincinnati	579	469	B.F. Goodrich	Akron, Ohio	445
288	Emerson Electric	St. Louis	799	379	PepsiCo	Purchase, N.Y.	579	470	Johnson Controls	Milwaukee	445
289	Detroit Edison	Detroit	788	380	San Bernardino County	S. Bernardino, Calif.	576	471	New York State E&G	Ithaca	445
290	Aramco Services	Houston	782	381	Stone & Webster	New York	576	472	Scherer-Plough	Madison, N.J.	445
291	Consumers Power	Jackson, Mich.	782	382	Bayer USA	Pittsburgh	575	473	Texas Eastern	Houston	445

Ranking of funds/sponsors 201-1,000

Rank	Fund/sponsor	Location	Assets	Rank	Fund/sponsor	Location	Assets	Rank	Fund/sponsor	Location	Assets
474.	Avon Products	New York	442	565.	Joseph E. Seagram	New York	350	657.	N. Ind. Public Service	Hammond, Ind.	281
475.	Norton	Worcester, Mass.	442	566.	Williams Companies	Tulsa, Okla.	350	658.	Phoenix City Empl.	Phoenix, Ariz.	281
476.	Screen Actors-Prod.	Burbank, Calif.	442	567.	Long Island Lighting	Hicksville, N.Y.	347	659.	AMAX	Greenwich, Conn.	280
477.	Firestone	Akron, Ohio	439	568.	Reader's Digest	Pleasantville, N.Y.	346	660.	Ernst & Whinney	Cleveland	280
478.	Missouri Local Gov't	Jefferson City	439	569.	Loews	New York	345	661.	Fort Howard Paper	Green Bay, Wis.	280
479.	Teamsters Local 710	Chicago	439	570.	Becton Dickinson	Franklin Lakes, N.J.	344	662.	Belk Leggett Stores	Charlotte, N.C.	279
480.	Union Electric	St. Louis	438	571.	Sandoz	New York	344	663.	Interco	St. Louis	279
481.	Int'l Typographical	Colorado Springs	437	572.	Hotel Restaurant 165	Las Vegas, Nev.	343	664.	Science Applications	La Jolla, Calif.	279
482.	Const. Laborers/S. Calif.	Los Angeles	436	573.	Major League Players	New York	343	665.	Lithographers Photo	Washington	276
483.	Colorado Fire Police	Denver	434	574.	Moore Business Forms	Chicago	343	666.	Sterling Drug	New York	276
484.	Kroger	Cincinnati	433	575.	Delmarva P&L	Wilmington, Del.	341	667.	Cargill	Minneapolis	275
485.	McGraw-Hill	New York	430	576.	Electrical Workers, 11	Los Angeles	341	668.	Commerce Clearing	Chicago	275
486.	San Diego G&E	San Diego	430	577.	Piedmont Aviation	Winston-Salem, N.C.	341	669.	Levi Strauss	San Francisco	275
487.	Florida Progress	St. Petersburg	429	578.	Amer. Home Products	New York	338	670.	Nestle	White Plains, N.Y.	275
488.	Aerospace	El Segundo, Calif.	428	579.	Fort Worth Empl.	Fort Worth, Texas	336	671.	San Mateo County	Redwood City, Calif.	275
489.	Denver Fire Police	Denver	426	580.	Arizona Public Service	Phoenix	335	672.	Washington Gas Light	Washington	275
490.	F.W. Woolworth	New York	426	581.	Centel	Chicago	335	673.	Alaska Laborers	Seattle	273
491.	Lear Siegler	Santa Monica, Calif.	425	582.	Revlon	New York	335	674.	Tiger International	Los Angeles	273
492.	Marriott	Bethesda, Md.	425	583.	Thomson McKinnon	New York	335	675.	Zenith Electronics	Chicago	271
493.	Laborers & Employees	Chicago	422	584.	Colo. Public Service	Denver	334	676.	Federal-Mogul	Detroit	270
494.	Chicago Firemen	Chicago	420	585.	Dallas Police Fire	Dallas	333	677.	Koppers	Pittsburgh	270
495.	Print. Press. Graphic	Los Angeles	417	586.	Hospital Corp. of Amer.	Nashville, Tenn.	333	678.	Teamsters, Upstate N.Y.	Chicago	270
496.	Tektronix	Beaverton, Ore.	417	587.	Minneapolis Teachers	Minneapolis	330	679.	Outboard Marine	Waukegan	268
497.	Carolina P&L	Raleigh, N.C.	416	588.	Nat'l Maritime Pension	New York	330	680.	Vulcan Materials	Birmingham, Ala.	268
498.	Ex-Cell-O	Troy, Mich.	414	589.	Rapid-American	New York	329	681.	Stanley Works	New Britain, Conn.	267
499.	R.H. Macy	New York	413	590.	Rexnord	Brookfield, Wis.	328	682.	Auto Workers 65	New York	266
500.	Paper Industry	Nashville, Tenn.	412	591.	Fint Employees	Flint, Mich.	326	683.	Hersey Products	Dedham, Mass.	266
501.	White Consolidated	Cleveland	412	592.	Savings Bank Empl.	Woburn, Mass.	326	684.	Laborers, Greater N.Y.	New York	266
502.	Cincinnati G&E	Cincinnati	410	593.	Fluor	Irvine, Calif.	325	685.	Maytag	Newton, Iowa	266
503.	Endata	Nashville, Tenn.	407	594.	Kern County Empl.	Bakersfield, Calif.	323	686.	Rochester G&E	Rochester, N.Y.	266
504.	Walgreen	Deerfield, Ill.	407	595.	Food Comm. Wrks.	Los Angeles	322	687.	Building Service Empl.	San Francisco	265
505.	Graphic Arts 458	Chicago	406	596.	Carter Hawley Hale	Los Angeles	320	688.	CBI Industries	Oak Brook, Ill.	265
506.	Jacksonville City	Jacksonville, Fla.	405	597.	Alexander & Alexander	Baltimore	318	689.	Fireman's Fund	Novato, Calif.	265
507.	Briggs & Stratton	Milwaukee	403	598.	Maritime Association	Houston	317	690.	Gates	Denver	265
508.	Carpenter Technology	Reading, Pa.	403	599.	Rohr Industries	Chula Vista, Calif.	317	691.	Kidde	Saddle Brook, N.J.	265
509.	AFTRA	New York	400	600.	Building Trades	Milwaukee	316	692.	Norfolk City	Norfolk, Va.	265
510.	Henley Group	La Jolla, Calif.	400	601.	Enserch	Dallas	316	693.	TPF&C	Philadelphia	265
511.	J.P. Stevens	New York	400	602.	Brockway (N.Y.)	Jacksonville, Fla.	314	694.	Alco Standard	Valley Forge, Pa.	264
512.	Longshoremen, ILA	Philadelphia	400	603.	Hammermill Paper	Erie, Pa.	313	695.	Northern Telecom	Nashville, Tenn.	264
513.	Seattle City Empl.	Seattle	400	604.	Western Union	Up. Saddle Riv., N.J.	311	696.	Food Comm. Wrks.	Edina, Minn.	263
514.	A.O. Smith	Milwaukee	399	605.	Boc Group	Montvale, N.J.	310	697.	S. western Pub. Service	Amarillo, Texas	263
515.	Roadway Services	Akron	399	606.	Farley Industries	Chicago	310	698.	Tinnova	Maumee, Ohio	263
516.	Safeway Stores	Oakland, Calif.	395	607.	Potomac Electric Power	Washington	310	699.	Equifax	Atlanta	262
517.	Op. Eng., Ohio Locals	Columbus	394	608.	Miami City Empl.	Miami	309	700.	Cleveland-Cliffs	Cleveland	260
518.	McKesson	San Francisco	393	609.	Royal Indemnity	New York	309	701.	Columbus S. Ohio Elec.	Columbus, Ohio	260
519.	CPC International	Englewood Cl., N.J.	392	610.	Sheet Metal Wrks. 108	Los Angeles	309	702.	Fairchild Industries	Chantilly, Va.	260
520.	Inter-Local Pension	Chicago	392	611.	United Food-Comm.	Chicago	309	703.	Upholsterers Int'l	Philadelphia	260
521.	Transco Energy	Houston	392	612.	Brunswick	Skokie, Ill.	308	704.	Amer. Insurance Assoc.	New York	259
522.	Carpenters Dist. Coun.	Chicago	390	613.	Hartford City	Hartford, Conn.	308	705.	Int'l Minerals & Chem.	Mundelein, Ill.	258
523.	Pennwall	Philadelphia	389	614.	Mo. Highway Transport	Jefferson City	308	706.	Carpenters, Ore. Wash.	Portland, Ore.	256
524.	Arthur D. Little	Cambridge, Mass.	387	615.	Sanders Associates	Nashua, N.H.	308	707.	Diamond Shamrock	Dallas	256
525.	Hughes Tool	Houston	387	616.	Boy Scouts of America	Irving, Texas	307	708.	Daniel International	Greenville, S.C.	255
526.	Carpenters Dist. Coun.	Southfield, Mich.	385	617.	N. Calif. Sheet Metal	San Francisco	305	709.	McDonald's	Oak Brook, Ill.	254
527.	West. Pa. Teamsters	Pittsburgh	385	618.	Gulf States Utilities	Beaumont, Texas	303	710.	Torchmark	Birmingham, Ala.	253
528.	Johnson & Higgins	New York	384	619.	Wal-Mart Stores	Bentonville, Ark.	303	711.	AMFAC	San Francisco	251
529.	Nebraska State Invest.	Lincoln	384	620.	N. Dakota State	Bismarck	302	712.	EG&G	Wellesley, Mass.	251
530.	Atlanta City	Atlanta	382	621.	Sonac	Birmingham, Ala.	302	713.	N.Y. Cultural Inst.	New York	251
531.	Food Comm. Wrks. 174	New York	379	622.	Illinois Power	Decatur, Ill.	301	714.	NVF	Miami Beach, Fla.	251
532.	Operating Eng. 324	Birmingham, Mich.	379	623.	Memphis L.G.&W	Memphis, Tenn.	301	715.	Pickands Mather	Cleveland	251
533.	Carpenters Dist. Coun.	Cleveland	378	624.	Blue Cross/Blue Shield	Des Moines, Iowa	300	716.	Sacramento City	Sacramento, Calif.	251
534.	Panhandle Eastern	Kansas City, Mo.	377	625.	Boston Edison	Boston	300	717.	Salt River Project	Phoenix, Ariz.	251
535.	Amstar	New York	375	626.	Bricklayers & Trowel	Washington	300	718.	Baton Rouge	Baton Rouge, La.	250
536.	Fresno County	Fresno, Calif.	373	627.	Gerber Products	Fremont, Mich.	300	719.	Great North. Nekoosa	Stamford, Conn.	250
537.	Clark Equipment	Buchanan, Mich.	370	628.	Hersey Foods	Hershey, Pa.	300	720.	Greater Cleve. Hosp.	Cleveland	250
538.	J.M. Huber	Edison, N.J.	369	629.	Jim Walter	Tampa, Fla.	300	721.	Ironwrks, Ohio Vicinity	Charleston, W. Va.	250
539.	Food Comm. Wrks.	Washington	368	630.	Kerr-McGee	Oklahoma City	300	722.	Nat'l Football League	New York	250
540.	George A. Hormel	Austin, Minn.	368	631.	Nat'l Industrial Group	Newark, N.J.	299	723.	Cyclops	Pittsburgh	249
541.	Northern Ill. Gas	Aurora	368	632.	Goldman, Sachs	New York	298	724.	ONEOK	Tulsa, Okla.	249
542.	Directors Guild Amer.	Los Angeles	367	633.	S.C. Johnson & Son	Racine, Wis.	298	725.	San Joaquin County	Stockton, Calif.	248
543.	Lever Brothers	New York	367	634.	Champion Spark Plug	Toledo, Ohio	295	726.	Consolidated Papers	Wis. Rapids, Wis.	246
544.	Perkin-Elmer	Norwalk, Conn.	367	635.	Nat'l Distill. & Chemical	New York	295	727.	Peabody Holding	St. Louis	246
545.	Cincinnati Milacron	Cincinnati	366	636.	Pitney-Bowes	Stamford, Conn.	295	728.	Arlington County Empl.	Arlington, Va.	245
546.	Gulf & Western	New York	366	637.	Anchor Hocking	Lancaster, Ohio	294	729.	Fresno City	Fresno, Calif.	245
547.	Arthur Andersen	Chicago	362	638.	Okla. Gas & Electric	Oklahoma City	294	730.	Operating Eng. 825	Newark, N.J.	245
548.	Calif. Butchers	Oakland	362	639.	St. Louis Police	St. Louis	292	731.	Chicago Park Empl.	Chicago	244
549.	IBEW Local 1547	Anchorage, Alaska	361	640.	N. Dakota Teachers	Bismarck	291	732.	Tampa City	Tampa, Fla.	244
550.	Amer. Hosp. Supply	Evanston, Ill.	360	641.	Amsted Industries	Chicago	290	733.	Tecumseh Products	Tecumseh, Mich.	244
551.	Gannett	Arlington, Va.	360	642.	Mars	McLean, Va.	290	734.	Agway	Syracuse, N.Y.	243
552.	S. Calif. Plumbing Heat	Los Angeles	360	643.	Brooklyn Union Gas	Brooklyn, N.Y.	289	735.	First Boston	New York	243
553.	National Elevator	Patterson, N.J.	359	644.	Carnation	Los Angeles	289	736.	Steelworkers Nat'l HQ	Pittsburgh	243
554.	Springs Industries	Fort Mill, S.C.	359	645.	Chesebrough-Pond's	Westport, Conn.	287	737.	AMCA International	Hanover, N.H.	242
555.	Plumbers Local 597	Chicago	358	646.	Longshoremen, ILWU	San Francisco	287	738.	Knight-Ridder	Miami	241
556.	Ventura County	Ventura, Calif.	356	647.	Blue Cross	Kansas City, Mo.	286	739.	St. Louis City	St. Louis	241
557.	Tribune Co.	Chicago	356	648.	NL Industries	New York	286	740.	Blue Bell	Greensboro, N.C.	240
558.	S. Calif. Rapid Transit	Los Angeles	355	649.	United Steelworkers	Philadelphia	286	741.	Hospital League	New York	240
559.	Amerada Hess	New York	354	650.	Joy Manufacturing	Pittsburgh	285	742.	Perin Central	Greenwich, Conn.	240
560.	Allis-Chalmers	Milwaukee	353	651.	Carpenters, Calif. Locals	San Marino, Calif.	283	743.	Reliance Electric	Cleveland	240
561.	Inter-Amer. Dev. Bank	Washington	353	652.	Potlatch	San Francisco	283	744.	Santa Barbara County	Santa Barbara, Calif.	240
562.	Peat Marwick Mitchell	New York	353	653.	Square D	Palatine, Ill.	283	745.	Carpenters, Illinois	Geneva	239
563.	American Motors	Southfield, Mich.	352	654.	Allegheny International	Pittsburgh	282	746.	Operating Eng. 15	New York	237
564.	Elec. Cont./IBEW 134	Chicago	350	655.	Carpenters Dist. Council	Philadelphia	281	747.	ACF Industries	Earth City, Mo.	236
				656.	Nalco Chemical	Naperville, Ill.	281				

Ranking of funds/sponsors 201-1,000

Rank	Fund/sponsor	Location	Assets	Rank	Fund/sponsor	Location	Assets	Rank	Fund/sponsor	Location	Assets
748.	Charter Co.	Jacksonville, Fla.	236	839.	Morrison Knudsen	Boise, Idaho	190	930.	Salomon Brothers	New York	160
749.	Food Comm. Wrks	Bellevue, Wash.	235	840.	Wis. Public Service	Green Bay	190	931.	Tyler	Dallas	160
750.	N. Dakota Public	Bismarck	235	841.	Syntex	Palo Alto, Calif.	189	932.	Wyatt	Washington	160
751.	Chubb	New York	234	842.	TBG	New York	189	933.	Diversified Energies	Minneapolis	159
752.	Hearst	New York	234	843.	Austin Employees	Austin, Texas	188	934.	Electrical Workers 103	Dorchester, Mass.	159
753.	United Services Auto	San Antonio, Texas	234	844.	Commonwealth Energy	Cambridge, Mass.	188	935.	Ozark Air Lines	St. Louis	159
754.	Elf Aquitaine	Stamford, Conn.	233	845.	Machinists, Automotive	Seattle	188	936.	Amer. Cast Iron Pipe	Birmingham, Ala.	158
755.	Food Comm. Wrks 876	Madison Hgts., Mich.	233	846.	St. Joe Minerals	Clayton, Mo.	188	937.	Marmon Group	Chicago	158
756.	Engelhard	Edison, N.J.	232	847.	Atlantic City Electric	Pleasantville, N.J.	186	938.	St. Louis Firemen	St. Louis	158
757.	Pacific Power & Light	Portland, Ore.	232	848.	Gray Tool	Houston	185	939.	Electrical Workers 58	Detroit	157
758.	Baker International	Orange, Calif.	231	849.	New York Times	New York	185	940.	Toledo Edison	Toledo, Ohio	157
759.	Gould	Rolling Meadows, Ill.	231	850.	Varian Associates	Palo Alto, Calif.	185	941.	Wisconsin Gas	Milwaukee	157
760.	Mass. Laborers	Newton	231	851.	Electrical Workers, IUE	E. Rutherford, N.J.	184	942.	Asbestos Workers	San Francisco	156
761.	Mass. Carpenters	Burlington	230	852.	Freeport-McMoran	New Orleans	184	943.	Carpenters Dist. Coun.	San Diego	156
762.	SCM	New York	230	853.	Knoxville City	Knoxville, Tenn.	184	944.	Montana Laborers	Canyon Creek	156
763.	Carpenters of W. Wash.	Seattle	229	854.	Laborers, Local 253	Jacksonville, Ill.	184	945.	Auto Club of S. Calif.	Los Angeles	155
764.	Andersen	Bayport, Minn.	228	855.	Org. of Amer. States	Washington	184	946.	Sisters of Mercy	Detroit	155
765.	Interlake	Oak Brook, Ill.	228	856.	Shelby County	Memphis, Tenn.	184	947.	Tacoma Employees	Tacoma, Wash.	155
766.	Utah Power & Light	Salt Lake City	228	857.	Foster Wheeler	Livingston, N.J.	182	948.	A.E. Staley	Rolling Meadows, Ill.	154
767.	Publix Super Markets	Lakeland, Fla.	227	858.	MAPCO	Tulsa, Okla.	182	949.	Dayco	Dayton, Ohio	154
768.	T.J. Lipton	Englewood Cl., N.J.	227	859.	Harsco	Camp Hill, Pa.	181	950.	Dravo	Pittsburgh	154
769.	Mitre	Bedford, Mass.	226	860.	Witco	New York	181	951.	Guy F. Atkinson	S. San Francisco	154
770.	Chicago Sanitary Dist.	Chicago	224	861.	Arvin Industries	Columbus, Ind.	180	952.	Indianapolis P&L	Indianapolis	154
771.	S. Calif. Plasterers	El Monte, Calif.	224	862.	Hiram Walker & Sons	Detroit	180	953.	Federal Express	Memphis, Tenn.	153
772.	Alumax	San Mateo, Calif.	222	863.	SKF Industries	King of Prussia, Pa.	180	954.	N. Western Steel & Wire	Sterling, Ill.	153
773.	GATX	Chicago	222	864.	San Antonio Fire Police	San Antonio, Texas	180	955.	Richmond Supp.	Richmond, Va.	153
774.	Birmingham City	Birmingham, Ala.	221	865.	Simpson Investment	Seattle	180	956.	Fort Lauderdale Gen'l	Fort Lauderdale, Fla.	152
775.	Hawaiian Electric Ind.	Honolulu	221	866.	Stanadyne	Windsor, Conn.	180	957.	Grand Union	Elmwood Park, N.J.	152
776.	Ironworkers, North N.J.	Newark	220	867.	Teamsters, Mid-Jersey	N. Brunswick, N.J.	180	958.	Media General	Richmond, Va.	152
777.	Lukens	Coatesville, Pa.	220	868.	Foxboro	Foxboro, Mass.	179	959.	Carpenters Int'l	Washington	151
778.	Typographical Union	Chicago	218	869.	Omaha Public Power	Omaha, Neb.	179	960.	Frank B. Hall	Briarcliff Manor, N.Y.	151
779.	Machinists 701	Chicago	217	870.	Ironworkers, Texas	Houston	178	961.	Revere Copper & Brass	Stamford, Conn.	151
780.	Producer-Writers Guild	Burbank, Calif.	216	871.	American Petrofina	Dallas	177	962.	Actors E. Screen Ex.	New York	150
781.	St. Paul Teachers	St. Paul, Minn.	216	872.	Bell & Howell	Skokie, Ill.	177	963.	Central Illinois Light	Peoria	150
782.	United Energy Res.	Houston	215	873.	Pennsylvania Municipal	Harrisburg	177	964.	Masco	Taylor, Mich.	150
783.	Western Metal Industry	Seattle	215	874.	U.S. Borax & Chemical	Los Angeles	177	965.	Omaha School Districts	Omaha, Neb.	150
784.	Adolph Coors	Golden, Colo.	214	875.	Wichita Retirement	Wichita, Kan.	176	966.	Questar	Salt Lake City	150
785.	American Hoechst	Somerville, N.J.	214	876.	Kansas City Schools	Kansas City, Mo.	175	967.	Teamsters Council 83	Richmond, Va.	150
786.	PaineWebber Group	New York	213	877.	Roofers	Washington	175	968.	American Water Works	Haden Hgts., N.J.	149
787.	Becor Western	S. Milwaukee, Wis.	211	878.	Teamsters Local 282	Elmont, N.Y.	175	969.	Laborers Local 310	Cleveland	149
788.	Kansas Power & Light	Topeka	211	879.	Teco Energy	Tampa, Fla.	175	970.	M.A. Hanna	Cleveland	149
789.	Laborers, District Coun.	Pittsburgh	211	880.	Dow Jones & Co.	New York	174	971.	National-Standard	Niles, Mich.	149
790.	Ohio Casualty Insurance	Hamilton	211	881.	UAW, National HQ	Detroit	174	972.	American Greetings	Cleveland	148
791.	Rochester Telephone	Rochester, N.Y.	211	882.	Dayton Power and Light	Dayton, Ohio	173	973.	Sealed Air	Muskegon, Mich.	148
792.	Acco Babcock	Fairfield, Conn.	209	883.	Electrical Workers, 332	San Jose, Calif.	173	974.	Teamsters, No. Jersey	Union City, N.J.	148
793.	BBDO International	New York	209	884.	Amica Mutual Insurance	Providence, R.I.	172	975.	Food Comm. 1059	Columbus, Ohio	147
794.	Parker-Hannifin	Cleveland	209	885.	PACCAR	Bellevue, Wash.	172	976.	Kansas City Police	Kansas City, Mo.	147
795.	Writers Guild West	Chicago	208	886.	Simpson Timber	Seattle	172	977.	Laborers, Hod Carriers	Terre Haute, Ind.	147
796.	Illinois Tool Works	Chicago	208	887.	Cluett, Peabody	New York	171	978.	William Wrigley Jr.	Chicago	147
797.	Duquesne Light	Kansas City, Mo.	206	888.	Copperweld	Pittsburgh	171	979.	Copley Press	La Jolla, Calif.	146
798.	H&GL Funds of N.J.	N.J.	206	889.	Humana	Louisville, Ky.	171	980.	Idaho Power	Boise	146
799.	Arthur Young	New York	205	890.	Pechiney	Greenwich, Conn.	171	981.	S. Carolina E&G	Columbia	146
800.	Marion Laboratories	Kansas City, Mo.	205	891.	Textile Workers	New York	171	982.	W.W. Grainger	Skokie, Ill.	146
801.	Blue Cross BlueShield	Southfield, Mich.	204	892.	Combined Insurance	Chicago	170	983.	Calif. State Auto Assn.	San Francisco	145
802.	Pittston	Greenwich, Conn.	204	893.	Commercial Credit	Baltimore	170	984.	Eagle-Picher Industries	Cincinnati	145
803.	Mach., Dist. IAM AW 9	Bridgeton, Mo.	203	894.	Ginsburg, Freund	New York	170	985.	Lubrizol	Wickliffe, Ohio	145
804.	Marin County	San Rafael, Calif.	203	895.	Principal Mutual Life	Des Moines, Iowa	170	986.	American Financial	Cincinnati	144
805.	Arkla	Shreveport, La.	202	896.	Kansas City P&L	Kansas City, Mo.	169	987.	Deloitte, Haskins	New York	144
806.	Carpenters, West. Pa.	Pittsburgh	202	897.	Land-O-Lakes	Arden Hills, Minn.	169	988.	Crown Cork & Seal	Philadelphia	143
807.	Signode	Glenview, Ill.	201	898.	Puget Sound P&L	Bellevue, Wash.	169	989.	Plumbers 98. 636	Southfield, Mich.	143
808.	Continental Grain	New York	200	899.	Barnes Group	Bristol, Conn.	168	990.	Hartmarx	Chicago	142
809.	Curtiss-Wright	Lindhurst, N.J.	200	900.	Sub. Teamsters-N. Ill.	West Chicago	168	991.	J. Waller Thompson	New York	142
810.	National Fuel Gas	Buffalo, N.Y.	200	901.	Western Air Lines	Los Angeles	168	992.	Midland-Ross	Cleveland	142
811.	Portland Gen. Electric	Portland, Ore.	200	902.	Tandy Radio Shack	Fort Worth, Texas	167	993.	Electrical Wrks 25	Melville, N.Y.	141
812.	Automotive Industries	Oakland, Calif.	199	903.	Seattle Ironworkers	Seattle	166	994.	Electronic Data Systems	Dallas	141
813.	Commonwealth Fund	New York	198	904.	Koch Industries	Wichita, Kan.	166	995.	Farm Credit Inst.	Louisville, Ky.	141
814.	Operating Eng., 542	Norristown, Pa.	198	905.	Laborers District Coun.	Lansing, Mich.	166	996.	Grand Rapids City	Grand Rapids, Mich.	141
815.	State Highway Empl.	Little Rock, Ark.	197	906.	Louisiana-Pacific	Portland, Ore.	166	997.	Inland Container	Indianapolis	141
816.	Banco Popular	Hato Rey, P.R.	197	907.	Lucky Stores	Dublin, Calif.	166	998.	Lumber Industry	San Francisco	141
817.	Indiana Farmers Mutual	Indianapolis	197	908.	MCA	Universal City, Calif.	166	999.	Operating Eng. 66	Monroeville, Pa.	141
818.	Ironworkers of S. Ohio	Dayton	197	909.	National Gypsum	Dallas	166	1000.	Jack Eckerd	Clearwater, Fla.	140
819.	Newmont Mining	New York	197	910.	Plumbers Locals	San Francisco	166				
820.	Gries Dynacast	Yorktown Hgts., N.Y.	196	911.	Republic Airlines	Minneapolis	165				
821.	Ironworkers Local 25	Birmingham, Mich.	196	912.	A.G. Edwards & Sons	St. Louis	164				
822.	White Castle System	Columbus, Ohio	196	913.	Figgie International	Richmond, Va.	164				
823.	Moorman Manufacturing	Quincy, Ill.	195	914.	Hotel Trades Council	New York	164				
824.	National Can	Chicago	195	915.	Elec. Workers, 1186	Honolulu	163				
825.	Clothing Tex. Wrks. Hat	New York	194	916.	Entex	Houston	163				
826.	Ohio Laborers	Columbus	194	917.	U.S.F.I.G.	Baltimore	163				
827.	Plumbers, Steamfitters	New York	194	918.	Blue Cross of Mass.	Boston	162				
828.	Bowater	Darien, Conn.	193	919.	Dan River	Danville, Va.	162				
829.	Oakland County	Portlanc, Mich.	193	920.	Carp. State Coun.	Anchorage, Alaska	161				
830.	Black & Decker U.S.	Towson, Md.	191	921.	Chicago Pneumatic	New York	161				
831.	Castle & Cooke	Los Angeles	191	922.	Food Comm. 464	Little Falls, N.J.	161				
832.	ILA, N. Orleans Steam.	New Orleans	191	923.	Yellow Freight System	Overland Park, Kan.	161				
833.	Oakland Police Fire	Oakland, Calif.	191	924.	Day International	Dayton, Ohio	160				
834.	Willamette Industries	Portland, Ore.	191	925.	DeKalb Employees	Decatur, Ga.	160				
835.	Acme-Cleveland	Cleveland	190	926.	Dillon Companies	Hutchinson, Kan.	160				
836.	Armstrong Rubber	New Haven, Conn.	190	927.	Elkem Metals	Pittsburgh	160				
837.	Brown Group	St. Louis	190	928.	Philadelphia Ironworkers	Philadelphia	160				
838.	Ironwrks, 40/361/417	New York	190	929.	Nashville/Davidson	Nashville, Tenn.	160				

On the following pages, *Pensions & Investment Age* presents sketches of the nation's 200 largest pension funds. Included for the top 100 are highlights of news events from 1986 and a list of money managers and key personnel. The allocation of assets for all 200 funds also is presented. All information is ©1987 Crain Communications Inc.

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Retirement Systems of Alabama

	(\$ millions)
Total assets	5,454
Defined benefit	5,454
Employer contributions	246
Benefit payments	235

MONTGOMERY, Ala. — The Retirement Systems of Alabama sold its stock in the beleaguered Mission Insurance Group after it was speculated the fund would accept stock instead of cash for interest on the notes and debentures it held in the financially troubled company.

The system had filed suit in January to force Mission into involuntary Chapter 11 bankruptcy

proceedings after it failed to make semiannual interest payment on the debentures. The suit was pending at year end.

The fund more than doubled its commitment to mortgages during the year ended Sept. 30 because of confidence in that sector. In addition, fund officials began to use stock options because they want to invest in stocks more aggressively because of a flat bond market.

Because of its increased commitment to mortgages, the fund cut back its allocation to mortgage-backed securities.

As of Sept. 30, the fund's book value grew 14.9% to \$5.45 billion from \$4.744 billion a year earlier.

The system is composed of the Teachers Retirement System, with \$3.72 billion; the Employees Retirement System, \$1.68 billion; and the Judicial Retirement Fund, \$49.8 million.

Employer contributions dropped to about \$246 million in

1986 from about \$255 million the year before due to good investment returns.

The entire fund is managed in-house. As of Sept. 30, about \$120 million was in stock index funds, a decrease of about \$55 million from a year ago. Officials said they sold the profitable stock and took the money. Another \$20 million was in GICs, \$4.1 million in equity real estate, \$422 million in mortgages and \$909 million in mortgage-backed securities.

The asset mix as of Sept. 30 was 7.43% stocks, 52.23% bonds, 15.48% cash equivalents, 0.07% real estate equity, 0.37% GICs, 7.74% mortgages and 16.68% mortgage-backed securities.

Key investment personnel are David G. Bronner, chief executive officer; Hunter Reaves, director of fixed income; and Cheryl Duke, director of equities.

The money mover scorecard will be published Feb. 9.

State of Alaska Retirement Systems

	(\$ millions)
Total assets*	2,857
Defined benefit	2,857
Employer contributions	282
Benefit payments	118

*as of June 30, 1986

JUNEAU, Alaska — The State of Alaska Retirement Systems' assets jumped 30.8% to \$2.857 billion as of June 30, compared with \$2.185 billion as of Sept. 30, 1985. Officials said the rise was due to good stock and bond markets, especially in international equities.

Contributions for 1986 increased 43% to \$282 million from \$197 million, while benefit payments rose 37.2% to \$118 million from \$86 million.

The fund withdrew from the international bond markets, deciding to take profits and run from

unstable exchange rates, officials said.

The retirement system took advantage of a strong market, increasing its allocation to stocks about 50%. Foreign equity more than doubled, to \$181 million this year from about \$81 million.

The fund had \$161.1 million in real estate equity and \$440.3 million in mortgages, about \$69 million less than it had in mortgages last year. About \$1.79 billion is run in-house, including \$1.51 billion in fixed income and the remainder in short-term investments.

Fixed-income and stock-index futures are used.

As of June 30, the asset mix was 31.6% stocks, 37.5% bonds, 9.9% cash equivalents, 5.6% real estate equity and 15.4% mortgages.

The fund terminated real estate manager Prudential because of performance, and fund officials said the money was reallocated between bonds and domestic equity.

Equity managers (Domestic): Fred Alger, INVESCO; Lehman Management.

(International): Citibank, Morgan Guaranty.

Real estate managers: Aetna; John Hancock, Equitable; Security Capital; JMB; J.P. Morgan; Karsten.

First Pennsylvania Bank is master custodian.

Key investment officers are James R. Wilson, chief investment manager; Kenneth L. Shaffer, portfolio manager; and Martin Lentz, real estate officer.

Allied-Signal

	(\$ millions)
Total assets	6,600
Defined benefit	4,600
Thrift or savings	2,000
Employer contributions	140
Benefit payments	246

MORRISTOWN, N.J. — The pension funds of the old Allied and Signal companies were merged under a single master trustee after operating as separate entities once the two plan sponsors merged in 1985 to become Allied-Signal Inc.

Allied's master trustee, The Northern Trust Co., became master trustee for the entire plan. Chase Manhattan Bank had been the master trustee for the old Signal pension plan.

State Street Bank & Trust Co. became master trustee for all savings plan assets. Bank of America was master trustee for Signal's savings plan assets; State Street was master trustee for solely for Allied's savings plan.

In another development related to the companies' merger, the newly combined plan transferred about \$150 million in pension assets to the Henley Group, 35 business units spun off from the company created by the merger.

Allied-Signal dropped four domestic equity managers: Batterymarch Financial Management, C-S Capital Advisors Inc., Thomas J. Herzfeld and Lynch and Mayer Inc. Batterymarch continues as an international manager for Allied-Signal.

No changes were reported in fixed-income and real estate investment managers.

The total assets of the Allied-Signal fund increased 10%, to \$6.6 billion from \$6 billion. Defined benefit assets were up 15%, to \$4.6 billion from \$4 billion. The remaining \$2 billion is in a thrift or savings plan.

The employer contribution to the pension plan for 1986 was \$140 million; an estimated \$246 in benefits was paid out by the pension plan only.

The fund had \$1 billion managed internally, an increase of 33.3% over the previous period's \$750 million. About \$500 million

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The person you talk to owns the company.

Profiles

in fixed income, \$400 million in equity and \$100 in short term-instruments is managed in-house.

The asset mix as of Sept. 30 was 55% stocks, 28% bonds, 8% cash equivalents, 3% GICs and 6% real estate equity.

An indexed equity fund managed by Bankers Trust accounted for \$440 million in assets, while guaranteed investment contracts made up \$200 million of the total.

The Allied-Signal plan invested \$330 million in foreign equities, \$50 million in foreign bonds, \$45 million in venture capital, \$20 million in oil and gas, \$45 million in LBOs and \$230 million in real estate equity.

A \$1 billion dedicated bond portfolio was sold to take advantage of rising bond prices.

Equity managers: Bankers Trust; BMI Capital; Baron Capital; Capital Guardian; Chesapeake Capital; Corinthian Capital; Delaware Investment; Johnson, Valiant & Broadfoot; KR

Capital; Kurtz Capital; John A. Levin; Lieber; Lincoln Capital; Lord Abbott; Presidio Management; PRIMECAP; Donald Smith; Target Investors; Thomson, Horstmann & Bryant; Towneley; Verus Capital; Weiss, Peck & Greer; Westport Asset Management.

Bond managers: J.P. Morgan; Solomon Asset Management.

Real estate managers: Aetna; Equitable; John Hancock; Prudential; RREEF; Travelers.

International managers: Arnold & S. Bleichroeder; Battery March-International; Morgan Grenfell.

Options manager: Balch, Hardy & Scheinman.

Key investment personnel are Edward T. Tokar, vice-president-investments.

Mark E. Smith is senior portfolio manager for fixed-income investments and Vincent Della Volpe, senior portfolio manager for equity investments.

Aluminum Co. of America

	(\$ millions)
Total assets	2,500
Defined benefit	2,200
401(k)	300
Employer contributions	125
Benefit payments	na

PITTSBURGH — The Aluminum Co. of America added three money managers and dropped six during the year ended Sept. 30.

Matrix Capital Management and Mercator Asset Management were hired to run equities for the company's pension plan, while STW Fixed Income Management was brought in for fixed income.

Equity managers dropped were Fred Alger Management; Brundage, Story & Rose; Frontier Capital Management; Hathaway & Associates; and Stralem & Co. BEA Associates was dropped as a fixed-income manager.

Alcoa's total employee benefits assets rose 21.9% to \$2.5 billion in the period. Defined benefit plan assets climbed 22.9% to \$2.2 billion, from almost \$1.8 billion a year earlier.

The company has \$500 million in a stock index portfolio; \$130 million was invested during the year in an indexed bond portfolio.

Alcoa's investments include \$120 million in international investments, \$80 million in equities and \$40 million in fixed income; \$50 million in venture capital pools; \$25 million in leveraged buy-out situations; \$105 million in equity real estate; and \$22 million in mortgage-backed securities.

About \$34 million in guaranteed investment contracts with Metropolitan Life Insurance Co. and The Travelers Cos. matured during the year and weren't replaced.

The fund uses stock and bond options and stock index and

fixed-income futures. An undisclosed amount is protected through portfolio insurance.

The pension asset mix as of Sept. 30 was 62% stocks, 24% bonds, 9% cash equivalents, 5% equity real estate and 1% mortgage-backed securities.

Equity managers (Domestic): Franklin; Geewax; Terker; Matrix; Mercator; PRIMECAP; Rosenberg; State Street Bank; Wells Fargo.

(Global): Capital Guardian; J.P. Morgan.

Fixed-income managers: Fischer, Francis, Trees & Watts; Massachusetts Financial Services; Mellon Bank; J.P. Morgan; STW.

Real estate managers: Coldwell Banker; Equitable; John Hancock; RREEF.

Venture capital managers: Capital Management (Sequoia Funds); Charles River; Dillon Read (Concord Partners and Saratoga Fund); Ventech Partners.

LBOs: Kohlberg Kravis & Roberts.

Mellon Bank is the fund's master trustee.

Joseph C. Pellegrino is assistant treasurer, and Donna S. Barr, trust investment analyst.

American Airlines

	(\$ millions)
Total assets	2,892
Defined benefit	1,642
Defined contribution	1,133
401(k)	86
Other	31
Employer contributions	85
Benefit payments	110

FORT WORTH, Texas — During 1986, American Airlines added two equity managers to its \$1 billion Pilots Variable Pension Fund — Independence Investment Associates and Dremar & Embry Inc., for \$50 million each.

Vilas Fischer Associates, which handled equity and balanced accounts for the fund, was terminated.

Total employer contributions to all American plans decreased 19% to \$85 million from \$105 million for the 12 months ended Sept. 30. The decrease was the result of changes in actuarial assumptions.

Benefit payments increased 57%, to \$110 million as of Sept. 30 from \$70 million a year earlier.

Total assets for the American Airlines plan increased 27.1% to \$2,892 billion from \$2,275 billion.

American manages \$1.1 billion internally: \$1.02 billion in fixed income; \$70 million in equities; and \$10 million in short-term assets.

The American pension fund has \$1 billion in dedicated or immunized bonds, \$45 million invested in guaranteed investment contracts, \$70 million in foreign equity, \$30 million in foreign fixed income and \$10 million in other foreign investments.

About \$300 million is invested in mortgage-backed securities.

The plan uses stock options.

The asset mix for pension assets as of Sept. 30 was 42% stocks, 35% bonds, 8% cash equivalents, 10% mortgage-backed securities and 5% in international.

Balanced/equity managers: Atlanta Capital; Barrow, Hanley; Brown Brothers Harriman; Capital Guardian; Citicorp; Dremar & Embry; Independence; Dewey Square; Hotchkiss & Wiley; Penmark; RepublicBank Dallas; United Capital.

Options manager: Analytic Investments.

International managers: Morgan Grenfell; Rowe Price-Fleming; N.M. Rothschild.

Master trustee is RepublicBank Dallas.

Key personnel are William F. Quinn, assistant treasurer; Thomas Stawicki, director of trust investments; and Robert J. Chiore, investment analyst.

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Profiles

assistant treasurer-investments at Amoco Corp., retired July 1. His replacement has not been named.

During 1986, Amoco hired State Street Bank & Trust Co. as an international manager and terminated Ivory & Sime International Inc. It also terminated McKenzie, Walker Investment Management Inc. as an equity manager and moved the money in-house.

Pensions & Investment Age estimates that Amoco's employee benefit assets increased 18% to \$4.179 billion in the 12 months ended Sept. 30. The estimate is based on Dec. 31, 1985 figures provided by Amoco. Defined benefit assets alone increased 31%.

Employer contributions decreased 24% to \$173 million. Benefit payments increased 89% to \$335 million, largely because of work force reductions, officials said.

The fund has about \$474 million managed internally, estimated by *P&I Age* from the Dec. 31 figures. This includes \$415 million in stocks, \$23 million in bonds and \$36 million in short-term investments.

It has \$195 million in indexed stocks, \$316 million in foreign investments (largely stocks), \$103 million in real estate and \$71 million in limited partnerships, *P&I Age* estimates. It uses fixed-income futures.

As of Sept. 30, the approximate pension asset mix was 62% stocks, 9% bonds, 11% cash equivalents, 5% real estate equity and 13% foreign accounts and limited partnerships.

Equity managers: Chase Manhattan, CMB Investment, Dimensional Fund Advisors; Fidelity Management; Forstmann-Leff; Franklin Portfolio; Faye Sarofim; State Street Research.

Bond managers: Pacific Investment; Solomon Asset.

Real estate manager: Equitable.

International managers: Fidelity International; State Street Bank.

Chase Manhattan is master trustee.

The key investment person is John S. Ruey, administrative manager-investments.

Arizona State Retirement System

	(\$ millions)
Total assets*	5,507
Defined benefit	5,507
Employer contributions	124
Benefit payments	200

*as of June 30, 1986

PHOENIX, Ariz. — The Arizona State Retirement System reported dramatic increases in its indexed stock and bond holdings in 1986, with jumps of 108.8% and 157.6%, respectively.

As of Sept. 30, the system had \$1.092 billion in indexed stocks and \$492 million in indexed bonds.

Max Sullivan, director, said most of the increase came when balanced manager Gardner and Preston Moss was terminated in March and the bulk of its portfolio given to existing index fund manager, Wells Fargo Investment Advisors.

As of June 30, the fund reported defined benefit assets of \$5.507 billion, an increase of 34.2% from the \$4.103 billion reported a year earlier.

Its 1986 plan contribution was \$124 million, a decrease of 6% from the previous year, and its benefit payouts were \$200 million.

The fund runs \$100 million internally, all in short-term instruments.

The Arizona system has \$2.6 million in real estate equity; \$225 million in mortgages; and \$200 million in mortgage-backed securities.

As of June 30, the asset mix was 40% stocks, 40% bonds, 11% cash equivalents, 5% mortgages and 4% mortgage-backed securities.

Balanced managers: Criterion; Fiduciary Trust; INVESCO; Kemper Financial; and Wells Fargo.

Equity manager: Bernstein-Macaulay

Bond manager: Duff & Phelps

Mortgage manager: Valley National Bank

The fund's master custodian is Mellon Bank. Its investment management consultants are Wilshire Associates and SEL.

Mr. Sullivan is the key investment officer.

Atlantic Richfield Co.

	(\$ millions)
Total assets	2,700
Defined benefit	2,034
Thrift or savings	357
401(k)	166
PAYSOB	143
Employer contributions	na
Benefit payments	na

LOS ANGELES — Atlantic Richfield Co. liquidated assets from its defined benefit plan in 1986 to pay employees taking a

lump-sum, early retirement option. The liquidation brought total employee benefit assets down 17%, to \$2.7 billion as of Sept. 30 from \$3.25 billion in 1985. The defined benefit plan decreased 7.5%, to \$2.034 billion from \$2.2 billion.

ARCO hired the Fox Group as an equity manager when Wells Fargo & Co. acquired Crocker National Corp. in February. Wells Fargo did not want to take over what Crocker had managed.

In late 1986, the total employer contribution for that year had not yet been determined, but a corporate official had said earlier that the contribution was about \$111 million, approximately \$11 million more than had been projected before the early retirement program was offered.

Internally managed pension assets totaled \$1.068 billion: \$830 million in equities; \$185 million in fixed income, including private placements; \$30 million in short-term instruments; and \$23 million in real estate.

As of Sept. 30, ARCO had \$478 million in foreign equities and \$43 million in foreign bonds.

The fund has committed \$44 million for venture capital and \$8 million for oil and gas. Real estate equity totaled \$186 million and mortgages, \$27 million.

Stock options, stock index futures and fixed-income futures are used.

The approximate asset mix of the pension assets as of Sept. 30 was 57% stocks, 22% bonds, 3% cash, 9% real estate equity, 2% annuities, 1% mortgages and 6% venture capital, private placements and other investments.

Equity managers: G.T. Capital; Capital Guardian; Fidelity International; Fiduciary Trust; Fox Group; Rowe Price-Fleming; TCW; Warburg International.

Bond managers: Fiduciary Trust; MacKay-Shields; J.P. Morgan; Solomon Asset.

Real estate managers: Aldrich, Eastman & Walch; Lehn-dorff & Babson.

Mortgage manager: Citicorp. State Street Bank is master trustee.

E. Kent Damon Jr., vice president and investment officer, oversees the investment management of the fund.

Pensions & Investment Age's directory of investment advisers will run May 25.

Largest corporate funds (\$ millions)

Fund	Assets
General Motors Corp.	32,900
American Telephone & Telegraph Co.	30,340
General Electric Co.	22,891
IBM Corp.	18,191
Ford Motor Co.	14,800
E.I. du Pont de Nemours & Co. Inc.	12,218
NYNEX Corp.	11,962
Ameritech	10,478
Bell Atlantic Corp.	9,500
USX Corp.	9,400
GTE Corp.	8,962
BellSouth Corp.	8,750
Pacific Telesis Group	8,500
Exxon Corp.	7,550
U.S. WEST Inc.	7,350
Boeing Co.	7,200
Sears Roebuck & Co.	6,784
Eastman Kodak Co.	6,631
Allied-Signal Inc.	6,600
Southwestern Bell Corp.	6,208
United Technologies Corp.	6,108
Lockheed Corp.	6,065
Rockwell International	5,988
Chevron Corp.	5,898
Shell Oil Co.	5,811
Total	276,903

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Bell Atlantic Corp.

	(\$ millions)
Total assets	9,500
Defined benefit	8,500
Thrift or savings	1,000
Employer contributions	na
Benefit payments	na

PHILADELPHIA — Bell Atlantic Corp.'s total employee benefit assets were up 18.8% in the year ended Sept. 30, to \$9.5 billion from \$8 billion. In the same period, defined benefit assets rose 21.4% to \$8.5 billion from \$7 billion.

Bell Atlantic has \$1.1 billion in stock index funds and uses stock and fixed-income options and futures.

Managers (according to Money Market Directory): Citicorp; Franklin Portfolio; Geewax, Terker; Lord, Abbett; Mellon Capital; Mellon Real Estate; Mercantile Bank of St. Louis; Metropolitan Life; Miller, Anderson & Sherrerd; PRIMECAP; Sovran Bank; Wellington.

According to the company, Mellon Bank is master trustee and

Frank Russell Co. is the investment management consultant.

Overseeing Bell Atlantic's employee benefit assets are E.P. Rennie, director-trust investment management, and J.A. Bobrowski, director-trust administration.

BellSouth Corp.

	(\$ millions)
Total assets	8,750
Defined benefit	7,600
Thrift or savings	1,150
Employer contributions	na
Benefit payments	na

ATLANTA — BellSouth Corp.'s total employee benefit assets rose to \$8.75 billion as of Sept. 30, up 25.3% from the \$6.983 billion a year earlier.

In the same period, its defined benefit assets were up 23.6% to \$7.6 billion from \$6.15 billion. Its savings plan assets were up 38% to \$1.15 billion from \$833 million.

Managers (according to Money Market Directory): Alliance; Am-South Bank; Bankers Trust; Barnett Banks; C&S Investment; Dimensional Fund Advisors; First Kentucky; First Tennessee Investment; First Union/Capital Management; Jennison Associates; Loomis Sayles; NCB National Bank; PIMCO; State Street Bank; TREET.

Its master trustee is Wachovia

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Largest public funds (\$ millions)

Fund	Assets
California Public Employees	37,700
New York State Common Fund	31,533
New York City Retirement Systems	30,839
New York State Teachers	20,235
California State Teachers	19,361
New Jersey Division of Investment	16,901
Michigan State Employees	13,580
Ohio Public Employees	13,567
Wisconsin Investment Board	13,500
Texas Teachers	13,196
Ohio Teachers Retirement System	12,484
Florida Board of Administration	11,544
Pennsylvania School Employees	10,078
North Carolina Retirement Systems	10,003
Minnesota State Board	8,658
Georgia State Retirement Systems	8,382
Washington State Investment Board	8,100
Los Angeles County	7,293
Maryland State Retirement	6,778
Pennsylvania State Employees	6,730
Oregon Employee Retirement	6,522
Colorado Public Employees	6,322
Virginia Retirement System	6,296
Illinois Teachers	5,952
Arizona State Retirement System	5,507
Total	331,083

Profiles

Bank & Trust.

Overseeing the assets for Bell-South is Kincaid Patterson, director-trust assets.

Bethlehem Steel Corp.

(\$ millions)	
Total assets	2,913
Defined benefit	2,913
Employer contributions	65
Benefit payments	na

BETHLEHEM, Pa. — Bethlehem Steel Corp. hired State Street Bank & Trust Co. as trustee and record keeper for a new defined contribution plan for salaried employees launched Jan. 1, 1986.

Assets for the plan, managed by Fidelity Management & Research and The Putnam Advisory Co. were about \$25 million early in 1986, but no updated amount is available.

The company's defined benefit plan assets climbed 12% in the year ended Sept. 30, 1986, to \$2.913 billion from \$2.601 billion a year earlier. The bulk of the assets is in a dedicated bond portfolio.

The company made a \$65 million employer contribution to the fund in 1986. An estimated \$370 million of the plan's \$2.9 billion in assets, however, constitutes a receivable for contributions owed the fund.

Bethlehem Steel runs virtually all of its assets internally. As of Sept. 30, \$1.5 billion was invested in bonds, \$918 million in equities and \$74 million in short-term instruments.

Another \$50 million is in GICs with Prudential Insurance Co.

The asset mix as of Sept. 30 was 31.5% stocks, 51.5% bonds, 2.6% cash equivalents and 1.7% GICs. The remaining 12.7% represents the receivable.

Bankers Trust Co. is custodian. Walter W. Buckley Jr. is pension fund manager.

Boeing Co.

(\$ millions)	
Total assets	7,200
Defined benefit	4,200
Defined contribution	3,000
Employer contributions	na
Benefit payments	130

SEATTLE — Boeing Co. employee benefit assets totaled \$7.2 billion as of Sept. 30, an increase of almost 31% from the \$5.509 billion reported the previous year.

The bulk of the growth was in the company's defined contribution plans, whose assets increased almost 52% to \$3 billion as of Sept. 30 from \$1.975 billion a year earlier. Defined benefit assets increased 18.8%, to \$4.2 billion from \$3.534 billion.

Boeing has \$273 million invested in foreign markets; \$75 million committed to venture capital; \$150 million committed to leveraged buy-outs; and about \$200 million each in mortgages and mortgage-backed securities.

It uses stock index and fixed-income futures.

As of Sept. 30, the asset mix for the pension plan was 45% stocks, 40% bonds, 5% cash equivalents, 5% mortgages and 5% mortgage-backed securities.

Equity managers: Alliance, Cabanne Smith; Capital Guardian; Cashman Farrell; Century Capital; Chase Investors; Citicorp; First Interstate Bank of Washington; IDS Advisory; INVESCO; Rosenberg Capital; Sit Investment; Sirach/Flynn Elvins.

Bond managers: Robert C. Brown; W.R. Huff; McKee Investment Management; Morgan Guaranty; PIMCO; Seattle First National Bank.

Real estate managers: Aetna; First Chicago; Prudential; Security Pacific.

Chase Manhattan Bank is the master trustee; Frank Russell Co.

is the investment management consultant.

Key investment personnel are Gary Bland, director-trust investments and investor relations, and Elizabeth A. Marcoux, manager-trust investments.



California Public Employees' Retirement System

(\$ millions)	
Total assets	37,700
Defined benefit	37,700
Employer contributions	1,940
Benefit payments	1,600

SACRAMENTO, Calif. — The

\$37.7 billion California Public Employees' Retirement System is continuing to broaden its investment makeup since its adoption of the prudent person rule in 1984.

In 1986, the system's trustees added three external equity managers, moved at least \$1 billion in equity money in-house, increased its equity exposure and added an investment advisory council.

Trustees also continued investing in real estate, and prepared to invest in timberland. The fund also began the process of seeking a new custodian, as it will no longer use the state treasurer's office for that purpose.

One of the three external equity managers hired by the system, Citicorp Investment Management Inc., had been the equity adviser to the system, making recommendations only. The two others hired were Batterymarch Financial Management and Rosenberg Capital Management.

Each of these managers will be

given full discretion over the assets they manage, something the retirement system has not done before. Though it has had several advisers, final decisions were approved by the internal staff and trustees.

Citicorp has agreed to be paid on an incentive fee basis. The system also has a verbal agreement to add five new real estate advisers in the future, all of which the system expects to pay on an incentive fee basis.

The advisers are Richard Ellis; TCW Realty Advisors; Heitman Advisory Corp.; John Hancock Mutual Life Insurance Co., and Forest Investment Associates.

Hancock and Forest would be advisers for timber investments.

Each of the three external equity managers received \$500 million, leaving \$36.2 billion managed internally, including about \$5.5 billion in an internal index fund.

The fund's total assets in-

creased 29.3%, to \$37.7 billion from \$29.166 billion during the 12 months ended Sept. 30. Total employer contributions dropped to \$1.94 billion from \$2 billion. Benefit payments made during 1986 were \$1.6 billion, up 23% from \$1.3 billion.

The asset mix for the fund as of Sept. 30 was 32.8% stocks, 23.5% bonds, 2.4% cash equivalents, 5.4% real estate equity, 7.5% mortgages, 20.7% mortgage-backed securities and 0.7% pooled liquidity account.

Equity managers: Batterymarch; Citicorp; Rosenberg.

Real estate advisers: F.I.A. Associates; Equitable; LaSalle.

Key investment personnel are Greta Marshall, investment manager; Jim Smith, mortgage investment officer; Carl Wilberg, principal investment officer-equities; and Walt Williams, principal investment officer-fixed income.

Annual PIPER listings: Feb. 23.

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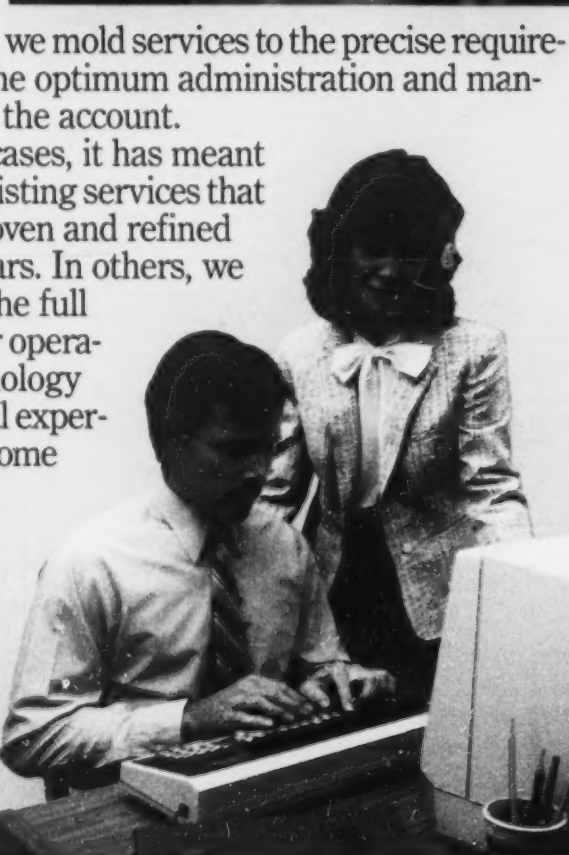
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Profiles

California State Teachers' Retirement System

	(\$ millions)
Total assets	19,361
Defined benefit	19,361
Employer contributions	2,500
Benefit payments	1,000

SACRAMENTO, Calif. — In 1986, the California Teachers' Retirement System hired five equity managers: Provident Investment Counsel; Denver Investment Advisors; Wright Investors' Service; Pilgrim, Baxter, Hoyt & Greig; and Equitable Investment Management Corp.

Each manager was given an initial allocation of \$100 million in assets as the system increased its equity exposure to 46% as of Sept. 30, from 31.1% a year earlier.

The bond allocation was cut to 24% from 57.3%, with about \$1.5 billion being shifted to stocks.

System trustees also hired consultant Pension Real Estate Services Inc. as a first step in setting up a structured real estate investment program. In addition, trustees decided to develop their own mortgage pass-through certificates and invest about \$400 million a year in single-family mortgages in California.

The fund also set up a program for divestiture of South Africa-related securities under state law. The system's officials said divestiture could involve divestment of 18.5% of its securities, and the program would begin Jan. 1, 1988.

Early in 1986, four staff members were added: Janice Hester, corporate affairs adviser; Elaine Lewter, equity monitor; Monty Lee, fixed-income portfolio manager; and Mal Kangas, mortgage loan officer.

As of Sept. 30, retirement assets for the pension fund totaled \$19.361 billion, up 28% from the \$15.1 billion reported a year earlier. Employer contributions for 1986 were \$2.5 billion, with benefit payouts of \$1 billion.

The system has \$6.875 billion in indexed stocks, up 212.5%; \$524 million in real estate equity, up 60%; \$695 million in mortgages, a decrease of 13%; and \$2.103 billion in mortgage-backed securities.

The asset mix as of Sept. 30 was 46% stocks, 24% bonds, 12% cash equivalents, 3% real estate equity, 4% mortgages and 11% mortgage-backed securities.

Equity managers: Barrow, Hanley, Mewhinney and Strauss; Denver Investment; Dimensional Fund; Equitable Investment; Pilgrim, Baxter, Hoyt & Greig; Provident Capital; Provident Investment; Trinity; Trust Company of the West; Wright Investors' Service; Wells Fargo Investment; and Wilmington Capital.

Bond managers: Loomis, Sayles; Manufacturers Hanover; Miller, Anderson & Sherrard; Pacific Investment; Scudder, Stevens & Clark; Stein Roe & Farnham; T. Rowe Price.

Real estate manager: Eastdil. The state treasurer serves as custodian; Wilshire Associates is the consultant.

Key personnel are Thomas Flanagan, chief investment officer; and Mr. Lee and Ms. Lewter.

University of California

	(\$ millions)
Total assets	8,378
Defined benefit	7,687
401(b)	691
Employer contributions	284
Benefit payments	84

BERKELEY, Calif. — The University of California pension fund is preparing to divest itself of companies with operations in South Africa as a result of a state law passed in August.

Under the law, state pension funds must divest themselves of all South Africa-related stocks, between Jan. 1, 1988, and Jan. 1, 1991. New investments in companies operating there are banned as of Jan. 1, 1987.

Original estimates of the amount to be divested by the university ran as high as \$3 billion, or about 36% of assets, but have declined through the recent withdrawals of some companies from South Africa.

The law also indemnifies trustees of all state funds so they cannot be held liable for losses that might result from divestiture.

In the past year, the internally managed pension fund took its first steps into international investing, placing \$6.1 million in international equities.

The fund also hired Bankers Trust Co. as master custodian, replacing Bank of California.

During the year ended Sept. 30, the university's total employee benefit assets rose 47% to \$8.378 billion from \$5.7 billion; defined benefit plan assets rose 47.8%, to \$7.687 billion; and 401(b) plan assets — similar to a corporate 401(k) — rose 38.2%, to \$691 million.

Employer contributions for 1986 totaled \$284 million and benefit payments, 84 million.

In addition to its international assets, the fund has \$75 million in venture capital and \$10 million in mortgages.

The asset mix as of Sept. 30 was 88% stocks, including venture capital, and 12% bonds, including mortgages.

Overseeing the fund are Herbert Gordon, treasurer, and Patricia Small, associate treasurer.

Caterpillar Inc.

	(\$ millions)
Total assets	3,617
Defined benefit	3,264
Defined contribution	268
Profit-sharing	2
401(k)	56
ESOP	27
Employer contributions	na
Benefit payments	na

PEORIA, Ill. — The employee benefit assets of Caterpillar Inc., formerly Caterpillar Tractor Co., increased 18.7% to \$3.617 billion from \$3.048 billion in the year ended Sept. 30. Defined benefit assets alone increased 20.9% to \$3.264 billion from \$2.699 billion.

During the year, Caterpillar added four equity managers — Delaware Investment Advisers, Mellon Capital Management Corp., PRIMECAP Management Co. and Trinity Investment Management Corp.

It also changed its relationship with affiliates of Equitable Life Assurance Society of the United States. It dropped Equitable Investment Management Corp. as an equity manager, but retained Equitable Real Estate Investment Management Inc. as a real estate manager.

The fund has \$1.161 billion in dedicated or immunized bond portfolios, \$223 million in real estate equity, \$190 million in foreign equities and \$24 million in oil and gas.

It uses stock options, stock index futures and fixed-income futures.

The fund applies dynamic hedging to \$1.3 billion of its assets, with Aetna Life & Casualty Co. as manager.

As of Sept. 30, the approximate pension asset mix was 48% stocks, 34% bonds, 10% cash equivalents and 8% real estate equity.

Equity managers (Domestic): Chase Investors; Citicorp; Delaware; Institutional Capital; Jennison; Mellon Capital; J.P. Morgan; Oppenheimer; PRIMECAP; State Street Research; Thorndike, Doran, Paine & Lewis; Trinity.

(Domestic): Baring International; Fidelity International.

Bond managers: Chase Investors; J.P. Morgan.

Real estate managers: Aetna; Equitable; First Chicago; LaSalle Street Fund; Travelers.

Northern Trust is master trustee. Frank Russell Co. is consultant.

Key investment personnel are Fred V. Dickinson, manager-risk management and employee benefit funds, and V.A. Kane, benefit funds coordinator.

Chevron Corp.

	(\$ millions)
Total assets	5,898
Defined benefit	3,862
Defined contribution	2,036
Employer contributions	na
Benefit payments	na

SAN FRANCISCO — The master trusts of Chevron Corp. and Gulf Oil Corp. merged into one plan July 1, 1986.

The new fund terminated 10 managers and added only one — Wells Fargo.

Equity managers dropped were Equitable Investment Management Corp., Provident Investment Counsel, Stralem & Co. Inc., Avatar Associates, Cambiar Investors Inc., Putnam Advisory Co. Inc., Rollert & Sullivan Inc. and Winchester Capital Management Co. Inc.

Terminated for fixed income were Degnan & Gillespie Fixed Income Management and Mellon Bank.

In addition, G.K. Carter, formerly comptroller, was named vice president-finance for Chevron USA, the operating company; D.G. Henderson, who previously held that position, became comptroller.

The fund has \$240 million in indexed stocks and approximately \$589 million in guaranteed investment contracts.

Fixed income futures are used. Investment options of the defined contribution plan include purchasing of Chevron stock, GICs or shares in American Mutual funds.

Equity managers: Sanford Bernstein; Estabrook; Jennison Associates; Lynch & Mayer; Mellon Capital; Rosenberg Capital; Wells Fargo.

Bond managers: Pacific Investment; State Street Research; STW.

Real estate managers: Prudential Insurance; Rosenberg Real Estate; and Travelers.

Bankers Trust is the defined benefit plan's master trustee and custodian. Mellon Bank is master trustee and custodian for the defined contribution (profit-sharing and savings) plan.

In addition to Mr. Henderson, key personnel are Neil Darling, manager-investment analysis; Robert Williamson, deputy controller; and Sellers Stough, vice president-finance.

Chrysler Corp.

	(\$ millions)
Total assets	3,260
Defined benefit	2,824
401(k)	436
Employer contributions	427
Benefit payments	410

DETROIT — Chrysler Corp.'s pension funds discovered the stock market during 1986 following an almost total withdrawal from the equities market in 1984.

In 1984, the automaker's pension management team liquidated all its equities and set up a \$1.2 billion dedicated bond fund. The dedicated bond fund was worth \$2.4 billion by Sept. 30, 1986.

Morgan Stanley Asset Management Inc. replaced Manufacturers Hanover Investment Corp. as a dedicated bond manager.

During the 12 months ended

Largest union funds (\$ millions)

Fund	Assets
Teamsters Western Conference	7,571
Teamsters Central States	7,070
UMWA Health & Retirement Funds	4,223
Boilermakers-Blacksmiths	1,984
Bakery & Confectionery Workers	1,600
Hospital/Health Care Employees	1,600
International Operating Engineers	1,515
Teamsters New England	1,265
IAM National Pension Fund	1,198
S. Calif. Food/Commercial Workers	1,181
Total	29,207

Largest miscellaneous funds (\$ millions)

Fund	Assets
TIAA-CREF	52,300
University of California	8,378
United Nations	5,884
Illinois Universities	2,483
United Methodist Church	2,416
World Bank	2,200
Tennessee Valley Authority	2,028
Southern Baptist Convention	1,767
Presbyterian Church U.S.A.	1,750
National Rural Electric Co-op	1,550
Episcopal Church Pension Fund	1,250
Total	82,006

Sept. 30, Chrysler increased its equity exposure to 10% of total funds from less than 1%. In the process, it set up an in-house program to run \$240 million in a portfolio replicating the Standard and Poor's 500 stock index, and funded a second equity manager, Ruggles & O'Neill, with \$25 million for its high-capitalization equity approach.

All the new money came out of the pension plan's cash portfolios and cash flow.

Even with the boost in equity exposure, the pension fund's fixed-income percentage increased to 72% by Sept. 30 from 71% during the year.

Powered by its favorable investment returns, Chrysler Corp.'s employee benefit assets grew 30.5% during the 12 months ended Sept. 30 to \$3.26 billion from \$2.497 billion.

Over the same period, the automaker's defined benefit plan assets grew 20.4% to \$2.824 billion from \$2.346 billion, while 401(k)/savings plan assets almost tripled, to \$436 million from \$151 million.

Contributions to all plans dropped to \$427 million from \$570 million. Benefit payments for 1986 rose to \$410 million from \$369 million.

Chrysler manages \$739 million of its pension assets in-house: \$240 million in equities; \$314 million in short-term assets; \$149 million in fixed income; and \$36 million in other assets.

Chrysler uses options and futures for both equity and fixed income.

Its asset mix as of Sept. 30 was 72% bonds, 14% cash equivalents, 10% stocks and 4% real estate equity.

Equity managers: Pacific Asset; Ruggles & O'Neill.

Bond managers: Bankers Trust; Irving Trust; J.P. Morgan Investment Management; Morgan Stanley; National Bank of Detroit; Trust Company of the West.

Real estate managers: Eastdil; JMB; Prudential Insurance; RREEF.

401(k) managers: Massachusetts Mutual Life (GICs); Merrill Lynch (equity and fixed income).

Bankers Trust is master trustee. Key personnel are: Frederick W. Zuckerman, vice president and treasurer; Joseph Arpin, assistant treasurer-banking; Russell P. Flynn, manager-pension fund administration; and J.F. Kassen, manager, pension fund investment.

Public Employees' Retirement Association of Colorado

	(\$ millions)
Total assets	6,322
Defined benefit	6,321
401(k)	1
Employer contributions	274
Benefit payments	225

DENVER — Anticipating the new tax law, the Public Employees' Retirement Association of Colorado has more than doubled its investment in real estate from \$100 million a year ago, investing in commercial and office buildings in San Diego, Chicago, Dallas, Los Angeles and San Francisco.

Employee benefit assets increased 25.8% in the year ended Sept. 30, to \$6.322 billion from \$5.024 billion a year earlier.

Employer contributions were \$274 million; benefits paid out to retirees were \$225 million.

The fund had \$118 million in guaranteed investment contracts, \$10 million in venture capital, \$230 million in real estate equity and \$678 million in mortgage-backed securities.

The fund uses stock options. All of the assets are managed internally.

The asset mix as of Sept. 30 was 43.7% stocks, 25% bonds, 14.2% cash equivalents, 3.6% real estate equity, 1.8% GICs and 11.7% mortgage-backed securities.

Manufacturers Hanover is custodian of the fund. Bankers Trust and Provident National Bank serve as investment management consultants.

Norman Jaskol is deputy executive director of the fund and Norman Benedict is assistant director.

The State of Connecticut Trust Funds

	(\$ millions)
Total assets*	4,819
Defined benefit	4,819
Employer contributions	575
Benefit payments	340

*as of Aug. 31, 1986

HARTFORD, Conn. — The State of Connecticut Trust Funds made its first move into indexing during the past year, hiring Bankers Trust — Investment Management Group to manage \$291 million in indexed stocks.

Treasury management: Aug. 10

Profiles

The system also hired four bond managers and one real estate manager during the year, and dropped two bond managers and one real estate manager.

The new bond managers are Pacific Investment Management; Standish, Ayer & Wood; State Street Research & Management; and STW Fixed Income Management. Scudder, Stevens & Clark and Lehman Management were terminated.

John Hancock Financial Services was hired as a real estate manager and The Travelers Cos. was terminated. The fund plans to add three more real estate managers soon: Copley Real Estate Advisors; Security Capital Real Estate; and Trust Co. of the West.

It also hired Wilshire Associates Asset Management Division to do a feasibility study on investing in international assets.

Total assets grew 30.9% in the year ended Aug. 31, to about \$4.82 billion from about \$3.68 billion.

The trust fund manages \$1.397 billion in-house; \$692 million in fixed income; \$302 million in short-term securities; and \$403 million in other investments, mostly in GICs and the state's Yankee Mac program, an in-state residential mortgage program.

As of Aug. 31, it had \$556 million in real estate equity, an increase of more than \$100 million from the previous year as the fund moves to reach its target of 15%; \$327 million in mortgage-backed securities; and \$73 million invested in guaranteed investment contracts.

The asset mix as of Aug. 31 was 43% stocks, 31% bonds, 6% cash equivalents, 11% real estate equity, 2% GICs and 7% mortgage-backed securities.

Equity managers: Aetna; Bankers Trust; Capital Guardian; Concord Capital; Connecticut National; Franklin; Glickenhau; Oppenheimer; Phoenix Mutual; Provident Capital; Roanoke; Siebel; Wright Investors.

Bond managers: Bear Stearns; Loomis, Sayles; PIMCO; Standish, Ayer; State Street Research; STW.

Real estate managers: Aetna; Aldrich, Eastman & Walch; CIGNA; Hancock; Heitman; JMB; Morgan Bank; McMahan; Phoenix Investment; Public Storage; State Street; RREEF.

Buck Pension Fund Consultants serves as the investment management consultant.

Key personnel are Frank McDermott, deputy treasurer-investments; Terry Helming, investment officer-fixed income; and Robert Staley, investment officer-real estate.

billion from \$2 billion, while thrift and savings plan assets were up 40% to \$350 million from \$250 million.

In addition to its \$30 million in indexed stocks, the fund also has \$90 million in GICs. Because of a healthy foreign market, foreign equities were up 33% to \$120 million from \$90 million in 1985.

Venture capital commitments remained at \$35 million, and \$65 million was committed to leveraged buy-outs. The fund also has \$40 million in mortgage-backed securities.

The approximate asset mix of pension assets as of Sept. 30 was 55% stocks, 20% bonds, 20% cash equivalents, 3% guaranteed investment contracts and 2% mortgage-backed securities.

Delta uses about 30 money managers, but would confirm only that McKenzie, Walker manages its domestic equities and Morgan Grenfell and Globe Finlay manage international equities. Delta

did confirm there have been some manager changes during the year. Harris Trust is the master trustee.

Jim Taylor is assistant treasurer-investment management, and Jim Mathews is manager-investment management.

Detroit Retirement Systems

	(\$ millions)
Total assets*	2,742
Defined benefit	2,742
Employer contributions	161
Benefit payments	157

*as of June 30, 1986

DETROIT — The Detroit Retirement Systems, comprising the General Retirement System and the Police & Fire Retirement System, had assets, at book value, of \$2.742 billion, an increase of 11% from \$2.469 billion during the 12-month period ended June 30.

During 1986, the police and fire

system made its first allocation to a stock index fund, placing \$27.8 million with Bankers Trust Co. — Investment Management Group.

The Detroit Retirement Systems also significantly boosted the amount of assets invested in venture capital and certain real estate classes.

The systems had \$35.7 million committed to venture capital as of June 30, up 441% from \$6.6 million the previous year. The increase was attributed to the addition of several venture capital projects. Funding for the projects came from cash flow.

The systems also had \$92 million in real estate equity, up 347% from \$20.6 million; \$367 million in mortgages, up 60% from \$230 million; and \$151.6 million in mortgage-backed securities, down 32% from about \$222 million.

Del Berryhill, assistant executive secretary, said part of the increase in real estate equity was due to foreclosures on property,

thus giving the systems an equity ownership position. The balance of the increase in real estate equity, as well as in mortgages, was due to additional allocations.

The decrease in mortgage-backed securities, he said, primarily was the result of a number of them reaching maturity.

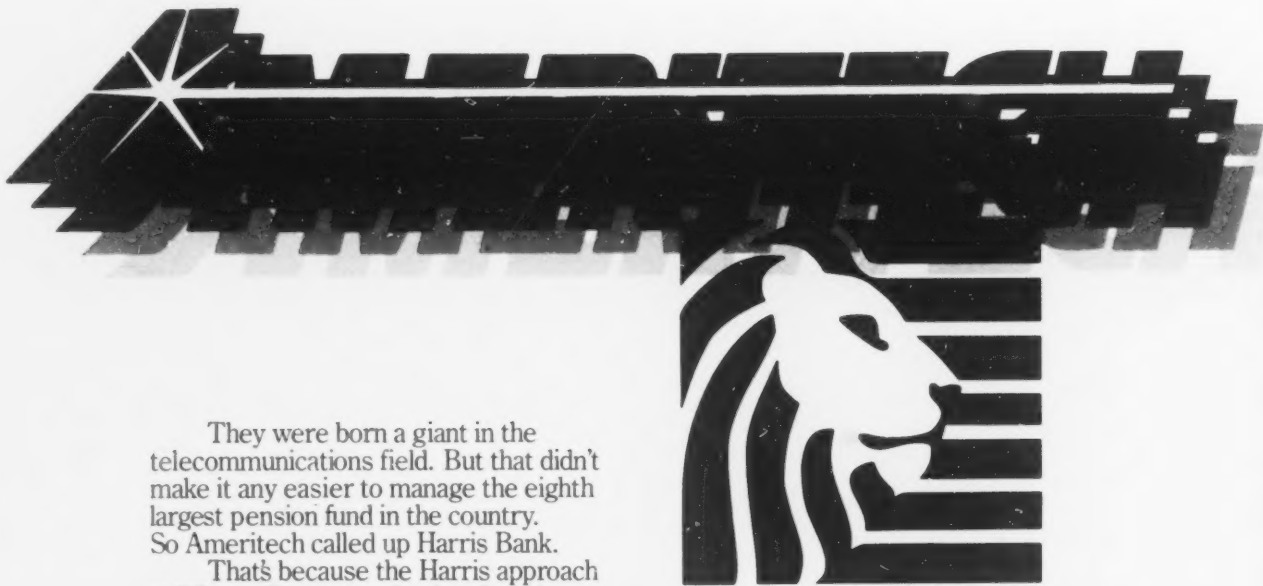
The systems manage \$158.1 million internally (all in short-term instruments), up 11% from \$142 million as of June 30, 1985.

Detroit also has \$356 million in guaranteed investment contracts and \$3 million in international fixed-income investments.

During 1986, it made pension contribution of \$160.8 million and paid out \$156.5 million in benefits.

The approximate asset mix of the fund as of June 30 was 25% stocks, 24% bonds, 12% cash equivalents, 3% real estate equity, 13% GICs, 14% mortgages, 6% mortgage-backed securities, 2% construction loans and 1% ven-

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Delta Air Lines Inc.

	(\$ millions)
Total assets	2,550
Defined benefit	2,200
Thrift or savings	350
Employer contributions	na
Benefit payments	na

ATLANTA — During 1986, Delta Air Lines Inc. began in-house management of \$170 million of its \$2.2 billion pension fund. Of the \$170 million, \$50 million was in equities (including \$30 million in indexed stocks) and \$120 million was in fixed income (including \$40 million in mortgage-backed securities). Assets for in-house management were derived from cash flow.

Employee benefit assets increased 13.3% to \$2.55 billion as of Sept. 30 from \$2.25 billion a year earlier. Defined benefit assets increased 10% to \$2.2

ture capital.

Managers: AFA Financial; Bankers Trust; Boston Co.; Comerica Bank-Detroit; Harbor Capital; Loomis, Sayles; Marquette Capital; Munder Capital; Oppenheimer; Putnam; Scudder, Stevens & Clark.

The custodian for the general system is Comerica Bank-Detroit while the custodian for the police and fire system is Manufacturers National Bank of Detroit.

The investment management consultant for both systems is SEI Funds Evaluation Services.

Key personnel overseeing the investment management of the funds are Fred Murphy, executive secretary, and Mr. Berryhill.

E.I. du Pont de Nemours & Co.

	(\$ millions)
Total assets	12,218
Defined benefit	9,985
Thrift/savings/401(k)	2,073
TRASOP	160
Employer contributions	126
Benefit payments	610

WILMINGTON, Del. — David F. Marvin, vice president of pension fund investment, left E.I. du Pont de Nemours & Co. to start his own investment management firm, Marvin and Palmer Associates in Wilmington last July.

He was replaced as vice president of pension fund investment by Keith E. Tucker, formerly head of fixed-income investment.

At the same time, Edward J.

Basset, director of equity research, and Michael L. Schonberg, head of the equity index portfolio, were named co-heads of equity investment.

Also during the year, fund officials created a large foreign bond portfolio and made a foray into venture capital.

By Sept. 30, \$1.172 billion was invested in foreign markets, an increase of 190% from the \$404 million in 1985, all in foreign equities. In all, \$484 million of the total was in equities, while \$688 million was in fixed income as of Sept. 30.

The plan also made a \$35 million commitment to venture capital, placed with Horsley Keogh.

Total du Pont employee benefit assets grew 26.4% to \$12.218 billion as of Sept. 30, from \$9.665 billion a year earlier.

Du Pont's defined benefit assets grew 27.3% to \$9.985 billion from \$7.841 billion a year earlier. Fund officials manage almost all assets internally: \$6.418 billion in equity; \$3.538 billion in fixed income; and \$23 million in other.

The internally run equity index portfolio was worth \$2.04 billion as of Sept. 30. The portfolio was set up with a \$1.22 billion investment Jan. 1, 1985. The fund also has \$23 million in real estate equity and about \$1.53 billion in mortgage-backed securities.

The fund uses stock index futures, fixed-income futures and bond options.

The asset mix as of Sept. 30 was 64.3% stocks, 20.2% bonds (in-

cluding cash), 0.2% real estate equity and 15.3% mortgage-backed securities.

Real estate manager: Trammell Crow.

Venture capital manager: Horsley Keogh.

The custodian is Wilmington Trust Co.

Key personnel are Messrs. Tucker, Basset and Schonberg, and Lawrence R. Starratt, head of fixed-income investment.



Eastman Kodak Co.

	(\$ millions)
Total assets*	6,631
Defined benefit	5,309
401(k)	1,322
Employer contributions	na
Benefit payments	na

*P&I Age estimate

ROCHESTER, N.Y. — In 1986, the Eastman Kodak Co. pension fund invested in a leveraged buy-out pool offered by Forstmann Little.

In addition, the fund hired The Boston Co. to provide active asset allocation services.

Earlier, two equity managers were added — Brignoli, Curley & Roberts and PRIMECAP Management Co. — as were two real es-

tate managers — Lehdorff & Babson Real Estate Counsel and National Life Insurance Co. Discount Corp. of New York Advisers was hired to manage a cash portfolio.

P&I Age estimates Eastman Kodak had \$5.309 billion in defined benefit assets and \$1.322 billion in 401(k) plan assets as of Sept. 30.

Total assets were estimated at \$6.631 billion, a jump of 18.8% from the previous year's estimate of \$5.582 billion.

Equity managers: American National Bank; Analytic; Sanford C. Bernstein; Brigoli, Curley & Roberts; Fidelity Management Trust; McKenzie Walker; J.P. Morgan; Neuberger & Berman; T. Rowe Price; PRIMECAP; Rogers, Casey & Barksdale; State Street Research; Templeton; TCW; Value Line; and Waddell & Reed.

Real estate managers: Aetna; Equitable; Goldman, Sachs; JMB; Lehdorff & Babson; National Life Insurance; and RREEF.

GIC managers: John Hancock and Metropolitan.

Venture capital manager: Horsley, Keogh & Associates.

Private investments: Cawley, Gillespie & Associates.

Cash manager: Discount Corp. Boston Safe Deposit is the fund's master trustee.

Key personnel are Russell L. Olson, director-pension investments, and A. Duff Lewis Jr., pension investment coordinator.

Exxon Corp.

	(\$ millions)
Total assets	7,550
Defined benefit	3,702
Profit sharing/401(k)	3,415
ESOP	433
Employer contributions	0
Benefit payments	785

NEW YORK — A spinoff/termination that recaptured \$1 billion in excess pension assets was among the main news for Exxon's pension fund during 1986. As a result of the termination, assets decreased 5.7% to \$7.55 billion from \$8.008 billion. Defined benefit assets decreased almost 20% to \$3.702 billion as of Sept. 30 from \$4.627 a year earlier.

In December 1985, the fund terminated equity managers RepublicBank Dallas and First City National Bank of Houston and subsequently hired Trinity Investment Management Corp., Sanford C. Bernstein & Co. Inc. and Fidelity Management Trust.

Helen Fox O'Brien, senior financial analyst, said the change was made "to optimize our management process."

The excess assets and resulting spinoff/termination also meant the company made no employer contribution for the year, which compares to \$113 million it contributed in 1985.

The amount of benefits paid to retirees in 1986 increased 44.3% to \$433 million from \$300 million a year earlier. A corporate operations restructuring in the summer of 1986 created a large number of early retirements among former employees, an official said.

Also in 1986, C.W. Williams, assistant treasurer, retired. He was replaced by W. Allen Harrison.

The fund's remaining asset mix consists of 58% stocks, 11% bonds, 5% cash equivalents, 3% mortgage-backed securities and 1% venture capital and oil and gas.

The total amount of assets managed internally as of Sept. 30 was \$1.525 billion: \$1.103 billion in equity, \$189 million in short-term investments, and \$233 million in fixed income.

The fund has \$1.703 billion in indexed stocks, \$233 in indexed bonds, \$321 million invested in foreign equity, \$58 million committed to venture capital, \$35 million committed to oil and gas,

\$454 invested in real estate equity and \$113 million in mortgage-backed securities.

The fund uses stock index futures.

Equity managers (as of Sept. 30): Sanford C. Bernstein; Citibank; Fidelity Management; Morgan Grenfell; State Street Bank; Trinity Investment; Wells Fargo Investors.

Bond managers: Scudder, Stevens & Clark; State Street Research.

Real estate managers: Aetna Life; Corporate Property Investors; Equitable Real Estate; Prudential Realty.

Insured annuities: Aetna; Equitable; Hancock; Prudential; Travelers.

Irving Trust is master trustee.

Key personnel are Mr. Harrison; James E. Bayne, manager of trusts and benefits finance; and Debra D. Drumbheller, financial adviser.



Florida State Board of Administration

	(\$ millions)
Total assets	11,544
Defined benefit	11,544
Employer contributions	1,021
Benefit payments	474

TALLAHASSEE, Fla. — Total assets of the Florida State Board of Administration increased 29.5% to \$11.544 billion as of Sept. 30 from \$8.911 billion a year ago.

The board's contributions increased 14.6%, to \$1.021 billion from \$891 million. Benefit payments increased 13.9% to \$474 million from \$416 million.

Florida dropped two equity managers, Pioneer Management Corp. and Batterymarch Financial Management, while adding Ariel Capital Management; Barnett Banks Trust Co.; Bear Stearns Asset Management; Denver Investment Advisors; IDS Advisory Group; Sun Banks Inc. and Westwood Management Corp.

Also dropped were option managers Bear Stearns Asset Management and Balch Hardy & Scheinman Inc. and real estate manager, First National Bank of Boston.

Small- and medium-capitalization stocks received increasing emphasis with the hiring of Denver Investment and IDS, which each received \$100 million.

System officials run \$6.202 billion internally: \$2.528 billion in equity, \$3.168 billion in bonds and \$506 million in short-term securities.

Among the fund's assets are \$90 million in foreign denominated fixed income; \$1.381 billion in a domestic stock-index fund; \$582 million in real estate equity and \$1.036 billion in mortgage-backed securities.

The fund uses stock options, stock index futures and fixed-income futures.

The asset mix as of Sept. 30 was 54.6% in stocks, 27% in bonds, 4.4% in cash equivalents, 5% in real estate equity and 9% in mortgage-backed securities.

Equity managers: Fred Alger; Alliance; Ariel; Barnett Banks; Barrow, Hanley, Mewhinney & Strauss; Bear Stearns; Delaware; Denver; Eagle; IDS; INVESCO; Lazard Freres; Prudential; South-eastern; Stein Roe & Farnham; Sun Banks; Wells Fargo; Westridge; Westwood.

Bond managers: Alliance; Thorndike, Doran.

Real estate managers: Aetna; Equitable; First Chicago Investment Advisors; Goldman, Sachs;

Morgan Grenfell Group plc and C. J. Lawrence & Company, Inc. are pleased to announce that

Morgan Grenfell Group plc has completed the acquisition of C. J. Lawrence & Company, Inc. and its wholly owned subsidiary Cyrus J. Lawrence Incorporated

Morgan Grenfell Group Offices in:

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Rio de Janeiro Santiago Singapore Stockholm Sydney Tokyo

December 30, 1986

Profiles

Hancock; LaSalle; Prudential. Citibank is custodian. SEI Funds Evaluation Services is the consultant.

E.J. Yelton is executive director. Fred Loopman replaced Thomas Fox as the deputy executive director for investments.

Ford Motor Co.

	(\$ millions)
Total assets	14,600
Defined benefit	12,200
Thrift/savings/401(k)	2,000
Other	400
Employer contributions	600
Benefit payments	800

DEARBORN, Mich. — Under a program started in 1986, the Ford Motor Co. pension fund separated its real estate assets from other assets run by its investment managers, said M.E. Maertens, manager-trust investments.

Previously, managers had the discretion to move in and out of asset classes, including real estate, oil and gas and international, as they deemed appropriate.

The fund also hired four real estate managers as part of the same program: Aetna Life & Casualty Co., CIGNA Corp., Security Capital Real Estate Corp. and LaSalle Advisors Inc.

During 1986, the pension fund hired Concord Capital Management, Dremar & Embry Inc. and Sanford C. Bernstein & Co. Inc., all for domestic equities. Sit Investment Associates Inc. was dropped as an equity manager.

As of Sept. 30, Ford had total employee benefit assets of \$14.6 billion, up 32.7% from \$11 billion the previous year. Of the total, \$12.2 billion was in a defined benefit plan, \$2 billion was in a combination savings/401(k) plan and \$400 million was in a TRASOP/PAYSOP plan.

Mr. Maertens attributed the increase in assets to strong investment performance and appreciation of company stock, in which about half of the savings plan's assets are invested.

In 1986, Ford contributed \$600 million to the defined benefit plan, down 7.7% from \$650 million in 1985. The company paid out \$800 million in benefits to retirees during 1986, up 14.3% from \$700 million the previous year.

The fund manages \$1.1 billion internally, of which \$800 million is invested in fixed-income instruments and \$300 million is in short-term vehicles. The fund moved the \$300 million in short-term assets in-house during 1986 to meet benefit payments in 1987.

Ford's pension fund has \$2 billion in a stock index fund, up 25% from \$1.6 billion as of Sept. 30, 1985; \$400 million in dedicated or immunized bond funds, up 33.3% from \$300 million the previous year; and \$1.1 billion in guaranteed investment contracts.

As of Sept. 30, the pension fund had \$500 million in international equity, up 100% from the previous year; \$200 million in international fixed income, up 150% from 1985; \$50 million in venture capital, the same as the previous year; and \$175 million in real estate equity, up 150% from 1985.

Mr. Maertens said those increases, and the elimination of oil and gas investments, were due to asset shifts by various investment managers.

Ford's pension fund uses stock index futures and fixed-income futures.

As of Sept. 30, the approximate asset mix of the pension assets was 61% stocks, 23% bonds, 5% cash equivalents, 2% real estate equity and 9% GICs.

Equity managers: Alliance Capital; Sanford C. Bernstein; Capital Guardian; Chase Investors; Concord; Dewey Square; Dremar & Embry; Fidelity Man-

agement Trust; Geo Capital; Hathaway; Manufacturers National Bank of Detroit; Mitchell Hutchins; J.P. Morgan; PRIMECAP; RepublicBank Dallas; Sarofim; Siebel; State Street Research.

Bond managers: Capital Guardian; Citicorp; Dewey Square; J.P. Morgan; T. Rowe Price; Sarofim; and State Street Research.

Real estate managers: Aetna; Bank of Boston; CIGNA; LaSalle Advisors; J.P. Morgan; RepublicBank Dallas; and Security Capital.

Manufacturers National Bank of Detroit is master trustee.

Key personnel are Mr. Maertens and K.C. Merrill, executive director of business development and trust investments.

A special section on leasing will be published June 15.

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General Dynamics Corp.

	(\$ millions)
Total assets	3,900
Defined benefit	2,500
Thrift or savings	1,400
Employer contributions	110
Benefit payments	86

CLAYTON, Mo. — General Dynamics Corp. experienced an 18.2% growth in employee benefit assets in the 12 months ended Sept. 30, to \$3.9 billion from \$3.3 billion. Defined benefit assets increased 19%, to \$2.5 billion as of Sept. 30 from \$2.1 billion a year earlier.

The fund made several changes in its investment management lineup during the period, hiring

six new equity managers and one new bond manager. Ten equity managers and three bond managers were terminated. All of the company's guaranteed investment contract carriers were retained.

A company spokesman said the changes reflect a more conservative investment management approach because of the pressure on defense contractors to hold down costs.

New equity managers are: Daniel Breen & Co.; First Manhattan Capital Management; J.P. Morgan Investment Management; Rosenberg Institutional Equity Management; Sasco Capital; and Trinity Investment Management.

Equity managers terminated were: Citibank; First Pacific Advisors Inc.; A.M. Kailing & Associates Ltd.; Frank Russell Investment Management; Hellman, Jordan Management Co. Inc.; Jundt/Capen Associates; Lindner Management Corp.; Neuberger & Berman Pension Management;

Provident Capital Management and Seibel Capital Management.

On the fixed-income side, General Dynamics added Mercantile Trust Co. and dropped BA Investment Management Corp.; Bankers Trust Co.; and Chase Investors.

The company also runs \$1.056 billion internally: \$926 million in fixed income, a 54.3% jump from \$600 million last year, and \$130 million in equity.

It has \$192 million invested in GICs.

Employer contributions for 1986 were \$110 million, down 38.9% from \$180 the previous 12 months; benefits to be paid out totaled \$86 million, up 43.3% from \$60 million.

Equity managers: Alliance; Anderson, Hoagland; Daniel Breen; Campbell Advisors; Delaware Investment; Equitable; First Manhattan; Lazard Freres; Lehman; Miller, Anderson & Sherrerd; J.P. Morgan Investment; Rosenberg; Sasco; Sit Investment;

What Wall Street could have learned from the garment district

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TCW Asset Management; and Trinity.

Bond managers: Centerre; Discount Corp.; Mercantile Trust.

GIC managers: Aetna; Equitable; Hancock; Metropolitan; Mutual Benefit; Travelers.

The asset mix as of Sept. 30 was 36% stocks, 45% bonds, 11% cash equivalents and 8% GICs.

The master trustee is Chase Manhattan Bank.

S.H. Hoch is executive vice president-finance. C.D. Walbrandt is staff vice president.

General Electric Co.

	(\$ millions)
Total assets	22,891
Defined benefit	18,801
Thrift, savings, 401(k)	3,808
ESOP	282

STAMFORD, Conn. — The acquisition of RCA Corp. by General Electric Co. was consummated in 1986, and the assets of the RCA pension, savings and ESOP trusts are included with those of the GE trusts in the above aggregate data.

However, the two plans are separate. (GE adopted Financial Accounting Standards Board Statement 87 for pension accounting in 1986 for both plans.)

GE Investment Corp., an investment management affiliate of GE, has assumed lead management responsibility. GE uses outside investment managers in selected areas but declines to identify them. GE runs essentially all of its pension assets internally.

Total employee benefit assets increased 44.8% to \$22.9 billion in the year ended Sept. 30, reflecting the inclusion of RCA. Defined benefit assets increased 46.1%, to \$18.801 billion.

There is \$2.602 billion of indexed equities, \$833 million in foreign equities \$261 million in foreign fixed income and \$602 million in guaranteed investment contracts.

GE uses stock and bond options and stock index and fixed-income futures.

The pension asset mix as of Sept. 30 was 49.9% stocks, 28.5% bonds, 1.6% cash and 20% other, including real estate, venture capital, private placements and GICs.

The fund uses portfolio insurance, but would not say to how much of its portfolio the technique is applied.

Chase Manhattan Bank is GE's master custodian. Bankers Trust is RCA's master trustee.

F.X. Tansey left GEIC in May to join Dreyfus.

D.F. Frey, vice president-investments and treasurer at GE also serves as chairman of the board and president of GEIC. He oversees investments, along with A.S. Bahr, J.H. Myers and J.E. Bonhivert, GEIC senior vice presidents.

General Foods Corp.

	(\$ millions)
Total assets	2,500
Defined benefit	2,000
Defined contribution	300
Other	200
Employer contributions	14
Benefit payments	50

WHITE PLAINS, N.Y. — General Foods Corp.'s employee benefits assets climbed 34.8% for the year ended Sept. 30, to \$2.5 billion from \$1.855 billion a year earlier.

Defined benefit assets increased 31.1% to about \$2 billion from the \$1.526 billion reported the previous year.

The pension fund has \$475 million in an indexed stock portfolio and \$275 million in guaranteed investment contracts.

A small amount — \$14 million — is invested in overseas equities. Venture capital commitments

total \$22 million, while equity real estate accounts for \$80 million of fund assets.

General Foods also uses stock index futures.

As of Sept. 30, the pension fund's asset mix was 44% stocks, 26% bonds, 8% cash equivalents, 6% equity real estate and 16% GICs.

Equity managers: Alliance Capital; Batterymarch; BEA Associates; Chase Investors; Citibank; DLJ Capital; First Wisconsin National Bank of Madison; Jennison Associates; John Hancock; Northern Trust; Thorndike, Doran, Paine & Lewis; Trinity Investment.

Fixed income: Aetna Life; Bankers Trust; Citibank; Metropolitan Life; Northern Trust; Prudential Insurance.

International: J.P. Morgan and NM Rothschild.

Real Estate: JMB; J.P. Morgan; Rothschild; Prudential; Trust Company of the West.

Venture Capital: Rothschild and John Hancock.

Chase Manhattan Bank and Northern Trust are master trustees. Evaluation Associates is pension consultant.

Those overseeing investments are Susan C. Philbrick, manager-investments; John L. Hilty, manager-investment analysis; and Roger B. Hostetter, director-investments.

General Motors Corp.

	(\$ millions)
Total assets	32,900
Defined benefit	28,700
Thrift or savings	3,800
Other	400
Employer contributions	na
Benefit payments	na

NEW YORK — General Motors Corp. reportedly leased dynamic risk hedging software to use against about \$10 billion in employee benefit assets last year.

The software was developed by Leland O'Brien Rubinstein Associates.

The fund also sold the plan's 50% interest in the Tysons Corner Center, McLean, Va., for slightly less than \$100 million.

In addition, the company hired 14 new managers in the 12-month period ended Sept. 30.

Picked to run portfolios of undisclosed size or type were BEA Associates Inc.; Beekman Capital Management Ltd.; Delaware Investment Advisors; Endowment Management & Research Corp.; Franklin Portfolio Associates Inc.; Frontier Capital Management Co.; W.R. Huff Asset Management; Lehman Management Co.; MacKay-Shields Financial Corp.; Magten Asset Management Corp.; Morgan Stanley Asset Management Inc.; Provident Investment Counsel Inc.; Solomon Asset Management Inc.; and Value Line Asset Management.

As of Sept. 30, employee benefit assets had grown 25.1% from the year before, to \$32.9 billion. Defined benefit plan assets had increased 25.3%, to \$28.7 billion. Thrift or savings plan assets, which include 401(k) plan assets, stood at \$3.8 billion, up 26.7% from \$3 billion.

Other managers for the fund are:

ABD; Aetna Life; Aldrich Eastman & Walth; American National Bank; Ameritrust; Bank of America; Bankers Trust; Baring; Barrow, Hanley, Mewhinney & Strauss; Batterymarch; Boston Co. Energy; Boston Co. Real Estate; Capital Guardian; Chase Manhattan; Citibank; Daiwa; Delaware; Dimensional; Endowment; Fidelity International; Fidelity Management; FNB Boston; FNB Chicago; Franklin; Frontier; G.T. Capital; Harris Trust; Inter-First Dallas; INVESCO; Jennison; Kleinwort Benson; Landauer; La-

Largest defined benefit plans (\$ millions)	
Fund	Assets
California Public Employees	37,700
New York State Common Fund	31,533
New York City Retirement Systems	29,767
General Motors Corp.	28,700
American Telephone & Telegraph Co.	25,771
New York State Teachers	20,235
California State Teachers	19,361
General Electric Co.	18,801
New Jersey Division of Investment	16,673
IBM Corp.	16,640
Michigan State Employees	13,580
Ohio Public Employees	13,567
Texas Teachers	13,198
Ohio Teachers Retirement System	12,484
Ford Motor Co.	12,200
Florida Board of Administration	11,544
Wisconsin Investment Board	11,400
NYNEX Corp.	10,089
Pennsylvania School Employees	10,078
North Carolina Retirement Systems	10,003
E.I. du Pont de Nemours & Co. Inc.	9,985
Ameritech	9,278
USX Corp.	9,000
Bell Atlantic Corp.	8,500
Georgia State Retirement Systems	8,382
Total	408,469

zard Freres; Lehman; Lincoln Capital; MacKay-Shields; Magten; Mellon Bank; Metropolitan Life; Morgan Grenfell; Morgan Guaranty; Morgan Stanley; National Bank of Detroit; Nomura; Provident Investment; Prudential Insurance; Rowe Price-Fleming; N.M. Rothschild; Schroder Capital; Solomon; TCW Asset; Travelers Hill Samuel; United Capital; Value Line; Weiss Peck & Greer; and Wells Fargo Bank.

Master trustees are Bankers Trust, Mellon and Chase Manhattan.

W. Gordon Binns Jr. is vice president and chief investment funds officer, and R. Charles Tschampion is director-investment manager relations.

Georgia State Retirement Systems

	(\$ millions)
Total assets	8,382
Defined benefit	8,382
Employer contributions	465
Benefit payments	295

ATLANTA — The combined Employee Retirement System and Teachers' Retirement System shifted \$160 million into indexed stocks in 1986, the only change in strategy during a year in which assets increased 38.5% to \$8.38 billion as of Sept. 30 from \$6.05 billion a year earlier.

Graham R. Lynch, director-division of investment services, attributed the increase to the strong performance of the bond market and the systems' heavy investments in bonds.

In addition to the \$160 million in indexed equities, the system had \$3 million in real estate equity, \$35 million in mortgages and \$120 million in mortgage-backed securities.

The assets are managed in-house, with five equity firms serving in an advisory capacity.

They are: Citizens & Southern Bank; FNB Atlanta; INVESCO; Trusco; and Thorndike, Doran, Paine & Lewis.

The asset mix as of Sept. 30 was 38% stocks, 58% bonds, 2% cash equivalents and 2% mortgage-backed securities. (Equity real estate and mortgages accounted for a negligible amount.)

The asset mix shifted slightly during the year ended Sept. 30, moving more heavily into stocks and bonds and taking some money out of cash and mortgage-backed securities.

Mr. Lynch said many of the system's Ginnie Maes matured during the year and were not replaced. Cash equivalents were

transferred primarily into the new indexed stock account.

Citizens & Southern National Bank is custodian of the teachers' fund, and First National Bank of Atlanta is custodian of the employees' fund.

Key personnel in addition to Mr. Lynch are C.W. Cary, assistant director, and Nancie Boedy, bond portfolio manager.

GTE Corp.

	(\$ millions)
Total assets	8,962
Defined benefit	7,924
Thrift or savings	1,038
Employer contributions	274
Benefit payments	211

STAMFORD, Conn. — GTE Corp.'s employee benefits assets grew 33% in the year ended Sept. 30, largely because of strong performance in its U.S. and overseas stock and bond portfolios.

Employee benefits assets totaled \$8.96 billion for the year, up from \$6.7 billion a year earlier. Defined benefit plan assets climbed 32% to \$7.92 billion from \$6 billion a year earlier.

Thrift and savings plan assets, which include a 401(k) component, increased 40% to \$1.038 billion from \$740 million previously.

GTE hired six managers and dropped two during the year, bringing the number of outside firms handling one or more accounts to 50.

Equity managers added were BDN Advisors, Sanford C. Bernstein & Co., Rosenberg Institutional Equity Management, Donald Smith & Co. and Weiss, Peck & Greer. The fund also committed assets to a small-capitalization stock fund run by existing manager Frontier Capital Management.

In fixed income, GTE hired Security Capital Management.

Pioneering Management and Trustee & Investors, both equity managers, were dropped during the year.

GTE Investment Management Corp., GTE's subsidiary housing the employee benefits function, runs \$1.39 billion of the company's pension assets, \$172 million of which is invested in equities and \$1.22 billion in fixed income.

Internally, the fund switched its fixed-income approach to passive from active by merging a nearly \$1 billion active bond portfolio with an existing indexed bond portfolio. Indexed bonds now total \$1.2 billion (the remaining \$22 million in internal fixed-income assets represent reserve ac-

counts). In addition to indexed bonds, GTE has \$577 million in indexed stock portfolios.

Foreign investments total more than \$1 billion for equities, and \$97 million for fixed income. Another \$90 million is committed to venture capital; \$145 million to oil and gas; \$180 million to leveraged buy-out partnerships; and \$65 million to equity real estate.

GTE also hedges through the use of stock options, stock index futures and fixed-income futures.

As of Sept. 30, the broad asset mix for the pension fund was 69% equity, 16% fixed income and 15% cash equivalents. No further breakout was given.

Equity managers: Bankers Trust; Baring International; BDN; Sanford Bernstein; BMI Capital; Cashman, Farrell; Concord Capital; Eagle Management & Trust; Fidelity International; First Manhattan; First Pacific Advisors; Franklin; Frontier Capital; Geewax, Terker; General American Advisors; Geocapital; Grantham, Mayo, Van Otterloo; G.T. Capital; Hellman, Jordan; Hotchkiss & Wiley; Hutton Capital; Investment Reserves; Johnson, Valliant & Broadfoot; Morgan Grenfell; J.P. Morgan Investment Management; Oppenheimer & Co.; Pacific Financial Research; PRIMECAP; Provident Investment Counsel; Rosenberg; Rowe Price-Fleming; Schafer Capital Management; Donald Smith; Trust Co. of the West; Weiss Peck & Greer; Wertheim-Philippe; Winchester Capital.

Fixed-income managers: Beutel, Goodman International; Endowment Management & Research; Morgan Grenfell; PIMCO; Security Capital; Solomon Asset Management.

Real estate managers: Citibank; Manufacturers National Bank; J.P. Morgan; State Street Bank & Trust.

Other (includes venture capital, leveraged buy-outs and oil and gas): Bankers Trust; Chase Investors; Citibank; John Hancock Group Annuity; Faye Sarofim; TCW; Kohlberg Kravis & Roberts; Forstmann Little & Co.

Bankers Trust is GTE's master trustee.

John Carroll, president of GTE Investment Management, and David Seidel, vice president-pension fund management of GTE Investment, are responsible for overseeing investment management for the fund.

h

Employees' Retirement System, State of Hawaii

	(\$ millions)
Total assets	3,009
Defined benefit	3,009
Employer contributions	165
Benefit payments	146

HONOLULU — The Employees' Retirement System, State of Hawaii hired two domestic equity managers and one international equity manager from a field of nine finalists during the past year.

The fund hired McCowan Associates Inc. and Hanson Investment Management Co., both for domestic equities, and Schroder Capital Management International, for an international equity portfolio. Each will run \$20 million.

Also during 1986, the system dropped Loomis, Sayles & Co. Inc. and switched Bernstein-Macaulay Inc. to a fixed-income portfolio from a balanced account.

The Hawaii employees' fund

Profiles

had total assets of \$3.009 billion as of Sept. 30, up 26.7% from the \$2.374 billion it reported as of June 30, 1985.

During 1986, it made pension contributions of \$165.2 million and paid out benefits of \$145.6 million.

The system manages \$719 million internally — \$400 million in mortgage loans to the fund's participants, \$150 million in guaranteed investment contracts, \$80 million in capital notes, \$70 million in cash equivalents, \$15 million in equity and \$4 million in fixed income.

As of Sept. 30, the fund had \$182 million in stock index funds, up 40% from \$130 million as of June 30, 1985, and \$121 million in GICs, down 15% from \$142 million.

The fund allocated an additional \$20 million, coming from cash flow, to its stock index fund manager, Mellon Capital Management Corp. The balance of the increase in stock index assets was due to market performance.

The decrease in GICs was due to the maturation of some of the insurance contracts.

The employees' system had \$281 million invested in international equities as of Sept. 30, an increase of 125%. Stanley Siu, secretary of the fund, attributed the increase to strong investment performance.

The fund invests \$105.3 million in real estate equity, up from \$19 million or 454% during the 15-month period. The trustees of the fund had set a target of 5% of total assets allocated to real estate equity and allocated additional money to their real estate managers toward that goal.

The retirement system also has \$445 million in mortgages.

As of Sept. 30, the approximate asset mix was 37% stocks, 40.9% bonds, 3.5% real estate equity, 4% GICs and 14.6% mortgages.

Equity managers: Alliance Capital; Atlanta/Sosnoff; Barrow, Hanley, Mewhinney and Strauss; Delaware Investment; Hanson; INVESCO; McCowan.

Bond managers: Bernstein-Macaulay; Lehman Management; PIMCO; Sarofim; Scudder, Stevens & Clark; Security Pacific.

Real estate managers: Aetna; Connecticut General; Metropolitan.

International managers: Daiwa; Nomura; Schroder.

Index manager: Mellon Capital.

Irving Trust Co. is the fund's master custodian. SEI Funds Evaluation Services and Callan Associates Inc. are its investment management consultants.

Key personnel overseeing the investment management of the fund's assets are Mr. Siu and David Shimabukuro, assistant secretary.

Hughes Aircraft Co.

	(\$ millions)
Total assets	4,300
Defined benefit	3,200
401(k)	1,100
Employer contributions	na
Benefit payments	na

EL SEGUNDO, Calif. — Hughes Aircraft Co. increased its assets 43.3% to \$4.3 billion from \$3 billion during the 12 months ended Sept. 30. No information was available on whether the plan assets were modified as a result of the purchase of Hughes by General Motors Corp. in 1985.

Defined benefits assets were up 60% in the 12-month period, to \$3.2 billion from \$2 billion. The 401(k) assets grew slightly, 10%, to \$1.1 billion from \$1 billion.

Some \$1.2 billion are managed by the subsidiary, Hughes Investment Management Co. There was \$300 million in equity; \$300 million in fixed income; and \$600 million in short-term assets man-

aged in-house.

In addition, \$120 million is invested in foreign equity; \$60 million in venture capital; \$20 million in oil and gas; \$50 million in leveraged buy-outs; and \$120 million in real estate equity.

The fund uses stock options and stock index futures.

The asset mix for the retirement benefit assets as of Sept. 30 was 69% stocks, 18% bonds, 4% real estate equity, 4% annuities and 5% other investments.

Managers (from Money Market Directory): Alliance; BEA; Capital Guardian; Coldwell Banker Capital Management; Dillon, Read; Forstmann-Leff; G.T. Capital; Hagler, Mastrovita; Jennison; Kurtz; Leland O'Brien Rubinstein; MacKay-Shields; McKenzie Walker; Neuberger & Berman; T. Rowe Price; Rowe Price-Fleming; PRIMECAP; RCM Capital; Reich & Tang; RREEF; TCW.

Investment managers for the

salaried and hourly savings plan with a 401(k) options: Alliance; Hagler Mastrovita; Jennison; McKenzie, Walker; RCM; Scudder, Stevens & Clark; TCW Asset.

Bankers Trust is master trustee. W. Allen Reed is the key investment officer and president of Hughes Investment Management.

i

IBM Corp.

	(\$ millions)
Total assets	18,191
Defined benefit	16,640
401(k)	1,551
Employer contributions	89
Benefit payments	235

STAMFORD, Conn. — IBM Corp. added Capital Guardian

Trust Co. and Sasco Capital Inc. as equity managers during the past year and dropped State Street Research & Management Co.

The company's total employee benefit assets grew 30.5% for the year ended Sept. 30 to \$18.191 billion from \$13.939 billion.

The defined benefit assets increased 26.6% to \$16.64 billion from \$13.139 billion. The 401(k) plan saw growth of 93.9%, jumping to \$1.551 billion from \$800 million.

IBM officials manage \$5.9 billion internally.

The fund invests in international, real estate, venture capital, stock and bond options and stock index and fixed-income futures.

Equity managers: Alliance; Bankers Trust; Citibank; Concord Capital; Capital Guardian; Cole, Yeager & Wood; Delaware Investment Advisors; Dimensional Fund Advisors; Fidelity International; Franklin Portfolio; G.T. Capital;

John Hancock Venture Capital; Jennison; Lombard-Odier International; Morgan Guaranty; PM Portfolio Management; Rowe Price-Fleming International; Sasco Capital; Solomon Asset Management; State Street; TCW Asset; T. Rowe Price; Wellington Management.

Bond managers: Jennison; Fischer, Francis, Trees & Watts.

Real estate managers: Prudential; RREEF; Equitable.

Chase Manhattan Bank is master trustee.

The fund's investment management consulting firms are SEI Funds Evaluation, Frank Russell and Richards & Tierney.

Officials at the fund are J. Grills, assistant treasurer; W. Hoyt, director-investment strategy; and R.E. Shultz, director-U.S. retirement funds.

Master trust directory, Sept. 7.

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Illinois Municipal Retirement Fund

	(\$ millions)
Total assets	2,980
Defined benefit	2,980
Employer contributions	130
Benefit payments	120

CHICAGO — The Illinois Municipal Retirement Fund made its first international investments during the past year, hiring Baring International Investment and Nomura Capital Management for a total of about \$150 million.

In a separate move, the fund dropped Batterymarch Investment Management as an equity manager because of what Gerald Sebsta Jr., executive trustee of the fund, said was poor performance and the inability to improve.

The \$212 million account that Batterymarch had managed was given to existing manager Dimensional Fund Advisors to run in an equity index fund. As a result, assets invested in stock index funds as of Sept. 30 increased to \$334.6 million, up 236% from the \$99.5 million a year earlier.

In 1986, the Illinois Municipal Retirement Fund also hired its first master trustee, Harris Trust and Savings Bank. Continental Illinois National Bank & Trust Co. of Chicago had been custodian.

Hiroshige Mori, assistant director and investment manager, said the growth in the number of managers working for the fund necessitated the hiring of a master trustee.

Illinois Municipal had \$2.98 billion in assets as of Sept. 30, an increase of 28.4% from the \$2.32 billion reported the previous year. Walter Koziol, assistant investment manager, attributed the increase to market performance.

The fund continued its imple-

mentation of an asset allocation policy approved in 1985. One result was the fund's internally managed, short-term portfolio increased 189% to \$130 million as of Sept. 30, from \$45 million the year before.

Foreign investments consist of \$116.4 million in foreign equity and \$34.2 million in cash equivalents.

The fund has \$28 million committed to venture capital, of which about \$8.9 million is invested, an increase of 287% from the \$2.3 million the fund had invested the previous year.

Assets invested in real estate include \$101.1 million in real estate equity and \$427.9 million in mortgage-backed securities.

The asset mix as of Sept. 30 was 42.6% stocks, 26.04% bonds, 13.3% cash, 3.4% equity real estate, 14.36% mortgage-backed securities and 0.3% venture capital.

Equity managers (Domestic): American National Bank; Dillon, Read; Dimensional; Fidelity Management; MacKay-Shields.

(International): Baring; Nomura.

Bond managers: Criterion; Fidelity; Manufacturers Hanover; Neuberger & Berman; Payden & Rygel.

Real estate managers: First Chicago; LaSalle; Prudential; Security Capital; TCW.

Venture capital managers: Centennial Fund; First Chicago Venture; Oxford Venture.

A.S. Hansen is investment management consultant.

Key personnel are Robert L. Cusma, executive director, Mr. Mori and Mr. Koziol.

The money mover scorecard will be published Feb. 9.

Teachers' Retirement System of the State of Illinois

	(\$ millions)
Total assets*	5,952
Defined benefit	5,952
Employer contributions	238
Benefit payments	360

*as of June 30, 1986

SPRINGFIELD, Ill. — The Teachers' Retirement System of the State of Illinois made its first allocation to a bond index fund during the first quarter of 1986. The fund hired State Street Bank and Trust Co. to run \$587 million.

The fund also made its first allocation to foreign fixed-income investments, placing \$66 million with First Chicago Investment Advisors to run in an international dollar bond account and an international non-dollar bond account, said Charles F. Hofer, investment officer of the fund.

The teachers' system dramatically boosted its international equity exposure to \$277 million from \$22 million. The bulk of that increase came from a \$220 million allocation to State Street to run in a Morgan Stanley Capital International Europe Australia Far East index fund.

During the fourth quarter of 1986, the fund hired Capital Supervisors Inc. to manage \$150 million in equities, replacing Batterymarch Financial Management. The retirement system also allocated an undisclosed amount to First Chicago Investment Advisors to run in an equity account.

The teachers' system also hired Bennett and Kahnweiler Realty Advisors but had not allocated assets to the firm as of June 30.

Assets of the fund increased 33%, to \$5.952 billion from \$4.474

billion between Oct. 1, 1985 and June 30, 1986.

Employer contributions for 1986 were \$238 million; benefits paid to retirees during 1986 were \$360 million.

Besides the bond index fund, the retirement system has \$1.516 billion invested in stock index funds, an increase of 74% from \$870 million in 1985.

The teachers' fund also had \$14 million invested in venture capital; \$125 million invested in real estate equity; and \$384 million in mortgage-backed securities.

The asset mix as of June 30 was 49% stocks, 36.6% bonds, 5.6% cash equivalents, 2.1% real estate equity, 6.5% mortgage-backed securities and 0.2% venture capital.

Equity managers: Alliance Capital; American National of Chicago; Ariel Capital; Cedar Hill; CMB Investment; Kemper.

Bond managers: Bear Stearns; Dreyfus Management; Marine Investment; PIMCO; State Street Bank; T. Rowe Price.

Real estate managers: Bennett and Kahnweiler; F.I.A. Associates; First Chicago Investment; JMB; TCW.

International managers: State Street Bank and First Chicago.

Venture capital managers: Frontenac.

Harris Trust is master trustee; Callan Associates Inc. is consultant.

Key personnel are Samuel W. Anderson, executive director, and Mr. Hofer.

Illinois State Universities Retirement System

	(\$ millions)
Total assets	2,483
Defined benefit	2,483
Employer contributions	94
Benefit payments	94

CHAMPAIGN, Ill. — The Illinois State Universities Retirement System underwent a major realignment in July, more than doubling its passive investments, making its first international commitment, increasing its real estate investments and adopting portfolio insurance, also called dynamic hedging.

Wells Fargo Investment Advisors was hired to manage about \$657 million in a stock index fund tracking the Wilshire 5,000, \$246 million tracking the Salomon Brothers Broad Investment Grade bond index and \$118 million in an international stock index fund tracking the Morgan Stanley Capital International Europe Australia Far East index.

About \$34 million also went to Wells Fargo as cash used in the portfolio insurance program. Of the total \$2.483 billion, \$2.146 billion is covered by portfolio insurance.

In real estate, the system committed \$50 million to Aetna Life & Casualty's Real Estate Separate Account and \$37 million to RREEF.

Four managers were terminated in the restructuring: American National Bank, which had managed \$445 million in passive equities but is still handling money temporarily until the bank finds a like-kind fund to replace the universities' fund; Dimensional Fund Advisors, \$51 million in passive equities; Lehman Management, \$330 million in active bonds; and Criterion Investment Management, \$42 million in a balanced account.

In addition, Charles M. Hundley left the retirement system in August to become a vice president with Northern Trust. He had been associate director since 1980. No replacement has been named yet.

As of Sept. 30, the fund grew 31.7%, to \$2.483 billion from \$1.886 billion the previous year.

Contributions were up 13.3% to \$94 million from \$83 million. Benefits paid out to retirees were down 7.8% to \$94 million from \$102 million.

The fund had \$787 million in indexed stocks, a 111% increase from the previous year's \$373 million. That includes \$144 million in foreign stock index funds.

There was \$10 million in GICs, a drop of 37.5% from \$16 million a year earlier. Real estate equity was up 124% to \$193 million from \$86 million. The fund also committed \$87.4 million to mortgage-backed securities.

The fund uses stock and bond options and stock index and fixed-income futures.

The asset mix as of Sept. 30 was 54% stocks, 28.6% bonds, 6% cash equivalents, 7% real estate equity, 0.4% GICs and 4% mortgage-backed securities.

Equity managers: American National; Wells Fargo; Faye Sarofim; and Batterymarch.

Bond managers: Wells Fargo and Pacific Investment.

Real estate managers: Aetna Life and RREEF.

The fund's custodian is Northern Trust; Ennis, Knapp & Associates is the investment consultant.

Overseeing the fund is Jeanne Valcik, pension and investment analyst.

Iowa Public Employees Retirement System

	(\$ millions)
Total assets	3,341
Defined benefit	3,341
Employer contributions	119
Benefit payments	120

DES MOINES, Iowa — The Iowa Public Employees Retirement System reduced its in-house short-term equity assets to \$99 million in 1986 from \$286 million to accumulate money to distribute to new managers.

Fund officials made their first commitments to venture capital, real estate and leveraged buy-outs during the past year; hired Mellon Capital Management early in 1986 to run a balanced account of about \$200 million; and hired Prudential Asset Management Co., Rosenberg Capital Management, IDS/Advisory Group and Value Investors as new equity managers.

System officials increased equity exposure to 31% during the year ended Sept. 30, from 26% a year earlier; the target is 40%.

Assets increased 26.7% to \$3.341 billion as of Sept. 30 from about \$2.636 billion a year earlier. Officials attributed the rise to an influx of contributions and to market appreciation.

Indexed stocks and bonds make up \$79 million and \$53 million of the assets, respectively.

The fund has committed \$19.5 million to venture capital, \$75 million to leveraged buy-outs, \$113 million to equity real estate and \$282 million to mortgage-backed securities.

The asset mix as of Sept. 30 was 31% stocks, 55% bonds, 3% cash equivalents, 3% real estate equity and 8% mortgage-backed securities.

Equity managers: Batterymarch; Capital Guardian; IDS Advisory; Mellon Capital; Provident Capital; Prudential Asset; Rosenberg; Value Investors; Wellington Management.

Bond managers: Boston Co.; Criterion; Loomis, Sayles; Miller, Anderson & Sherrerd; J.P. Morgan.

Real estate managers: Copely; Heitman; JMB; Security Capital.

Venture capital managers: Cable Howe; Intervest Partners; Invest America; Lawrence Venture Associates; Steinberg & Lyman.

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LBOs: Kohlberg Kravis & Roberts.

Morgan Guaranty Trust is the custodian; Wilshire Associates is the consultant.

Key investment personnel are Maurice Baringer, administrator; Dennis L. Jacobs, deputy administrator; and Larry Thompson, investment officer.

ITT Corp.

	(\$ millions)
Total assets	2,482
Defined benefit	1,633
Profit-sharing	33
Thrift or savings	662
Other	154
Employer contributions	na
Benefit payments	na

NEW YORK — ITT Corp. hired three new equity managers and one fixed-income manager in 1986.

ITT's new domestic equity managers are Fred Alger Management Inc., Management Asset Corp., and GAMCO Investors Inc.

Edwin J. Ehrlich, director of pension funds, said ITT hired Management Asset and GAMCO because he was looking for solid value managers and he was impressed by the strong track records of both firms.

One domestic equity manager, Crocker Investment Management Corp., was terminated.

On the fixed-income side, State Street Research & Management Co. was hired by ITT.

Mr. Ehrlich said that when Crocker National Bank sold its SIMCO subsidiary to Alger, ITT hired Alger. SIMCO had been a balanced manager for ITT, and he said he was pleased with the firm's performance. Mr. Ehrlich said when Alger was hired, the equity money that SIMCO was managing was left with Alger but the fixed-income funds were given to State Street Research.

The company had \$2.482 billion in total assets as of Sept. 30, up 20.5% from \$2.06 billion last year.

Defined benefit plan assets rose 20.9% to \$1.633 billion from \$1.351 billion last year.

ITT manages \$426 million in-house: \$219 million invested in equities; \$143 million in fixed income; \$50 million in short term instruments; and \$14 million in real estate.

The fund has \$85 million invested in indexed stocks and \$127 million in GICs.

In addition, as of Sept. 30 it had \$123 million invested in international equities; \$84 million in real estate equities; \$6 million in oil and gas; and \$11 million in leveraged buy-outs.

The fund uses stock index futures.

The asset mix is 65.2% stocks; 23.9% bonds; 4% cash equivalents; and 6.9% real estate equities.

The Northern Trust Co. is ITT's master trustee and custodian.

Equity managers: Alliance Capital; Alliance Capital International; Fred Alger; Barrow, Hanley, Mewhinney & Strauss; Capital Guardian; First Manhattan; GAMCO; G.T. Capital; Jennison; Lazard Freres; Management Asset; Manufacturers Hanover; Northern Trust; Verus Capital.

Real estate managers: Coldwell Banker; Corporate Property Investors; Equitable Real Estate; Metropolitan Life; RREEF.

Fixed-income managers: Morgan Guaranty; State Street Research & Management.

Edwin J. Ehrlich is director of the ITT pension fund trust. Eileen Leahy is manager of the pension fund trust.

Pensions & Investment Age's directory of investment advisers will run May 25.

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Kansas Public Employees' Retirement System

	(\$ millions)
Total assets	2,773
Defined benefit	2,773
Employer contributions	100
Benefit payments	125

TOPEKA, Kan. — During the year, the Kansas Public Employees' Retirement System put up \$1.2 million as financing for investors to buy limited partnership units in Capital Research Management Group Ltd., which will invest in high-technology companies, particularly those within the state.

The system's assets totaled \$2.773 billion as of Sept. 30, a 25.1% increase from the \$2.216 billion reported a year earlier.

Employer contributions increased 7.5%, to \$100 million from \$93 million, while benefit payments rose 14.7%, to \$125 million from \$109 million.

During the year, Kansas Employees added a bond manager — Bank IV — in November of 1985 assigning it \$50 million.

Of the \$211.2 million run in-house, \$110.9 million is in fixed income and \$100.3 million is in a mortgage pass-through program.

The fund has \$51.4 million in real estate equity and \$90.3 million in mortgage-backed securities.

The fund uses stock and bond options and stock index and fixed-income futures.

As of Sept. 30, the asset mix was 38% stocks, 43% bonds, 14% cash equivalents, 2% real estate equity and 3% mortgage-backed

securities.

Equity managers: Capital Supervisors; Investment and Capital Management; Market Research and Management; Pilgrim, Baxter, Hoyt & Greig; Provident Investment; Reimer & Koger.

Bond managers: Bank IV; Robert C. Brown; Investment Management Group; Pacific Investment Management.

Real estate manager: J.W. O'Connor.

Cash manager: Payden & Rygel.

Securities lending: Marine Midland Bank.

The custodian is Commerce Bank and Trust, Topeka. Its investment management consultant is Callan Associates.

Key personnel are Michael K. Russell, chairman of the board of trustees, and Marshall Crowther, executive secretary.

The cash management survey will be published Nov. 2.

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Lockheed Corp.

	(\$ millions)
Total assets*	6,085
Defined benefit	4,311
401(k)	1,774
Employer contributions	na
Benefit payments	na

P&I Age estimate

CALABASAS, Calif. — Lockheed Corp. added Pacific Financial Research as an equity manager for its defined contribution plan in early 1986, replacing Wertheim Asset Management Services Inc., a balanced manager.

In October, Lockheed took over the management of \$299 million in employee benefit assets for Sanders Associates Inc., a defense

Balcor Institutional Realty Advisors: Portfolio Strategies

The View from Westlake Meadows

In July, 1986 The Balcor Company purchased the Westlake Meadows Apartment Complex in Lake Oswego, Oregon, for one of its pension investors partnerships.

This project is of high quality workmanship and is well-designed to compete in this upper-end Portland suburb. In addition, because of the scarcity of land for future multi-housing development in this area, Balcor concluded that Westlake Meadows could be an excellent investment for its investors.

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electronics firm. The \$153.5 million in defined benefit assets and the \$145.5 million in defined contribution plan assets for Sanders is being kept administratively separate.

As a result of the addition of Sanders' benefit plan assets, one new manager was added to the Lockheed stable of managers, Wright Investors' Service.

Total employee benefit assets (excluding the Sanders plans) increased 39% to \$6.085 billion from \$4.373 billion between Dec. 31, 1984, and Sept. 30, 1986, according to a *Pensions & Investment Age* estimate.

Defined benefit plan managers: Alliance Capital; Anhalt/O'Connell; Bankers Trust; Baternymarch; Capital Guardian; Century Capital; Chase Investors; Citicorp; Delaware; First Interstate Bank of Washington; Forstmann-Leff; Karsten; Lombard Odier; Mellon Bank; J.P. Morgan; Royal Trust; Security Pacific; Smith Barney; TCW; and Western Asset.

Defined contribution managers: Bankers Trust; Delaware; Forstmann-Leff; Manufacturers Hanover; Pacific Financial; Sarofim; and TCW.

Bankers Trust is the master trustee and is used for performance measurement of plan assets. George C. Weintz, investment counsel, oversees assets.

Los Angeles County Employees' Retirement Association

	(\$ millions)
Total assets*	7,293
Defined benefit	7,055
Defined contribution	208
Thrift or savings	5
401(k)	25
Employer contributions	345
Benefit payments	327

as of June 30, 1986

LOS ANGELES — The Los Angeles County Employees' Retirement Association made its first venture capital investments in the third quarter of 1986, allocating \$50 million to Warburg Pincus Capital Co. limited partnership, offered by E.M. Warburg Pincus & Co., New York, and about \$30 million to Copley Partners I and Copley Partners II, offered by Copley Venture Partners, Boston.

Late in 1986, the county retirement board was in the process of allocating about \$900 million to international investments. About half of the amount would be managed passively.

Earlier in 1986, the trustees continued their real estate investing by committing \$10 million to an opportunity real estate investment fund, Trammell Crow Equity Partners, Dallas.

Also, Charles Spencer was appointed fund administrator. Previously, Richard B. Dixon, former treasurer and tax collector and recently named chief administrative officer for the county, had been responsible for investment management.

Assets for the retirement system increased about 27% to \$7.293 billion as of June 30, from \$5.747 billion a year earlier. Total employer contributions for 1986 were \$345 million and benefits paid out, \$327 million.

The fund manages \$1.101 billion internally: \$352 million in short-term instruments; \$501 million in fixed income; and \$248 million in mortgages.

Its alternative investments are: \$80 million committed for venture capital; \$121 million in real estate equity; \$248 million in mortgages; and \$1.122 billion in mortgage-backed securities.

As of June 30, the asset mix was 33% stocks, 27.9% bonds, 16% cash equivalents, 1.7% real estate equity, 3.5% mortgages, 15.9%

mortgage-backed securities and 2% in fixed account receivables.

Equity managers: Capital Guardian; Loomis, Sayles; Massachusetts Financial Services; Security Pacific Investment Managers; Stein Roe Farnham.

Bond managers: Brown Brothers Harriman; Capital Guardian; CMB Investment; Criterion Investment; Massachusetts Financial; J.P. Morgan.

Real estate managers: Heitman; Goldman, Sachs; John McMahon; Prudential Asset; Security Capital; Equitable; TCW; Trammell Crow; Karsten.

Venture Capital: E.M. Warburg Pincus; Copley Venture.

Security Pacific National Bank, Los Angeles, is the master custodian; Callan Associates, San Francisco, is the consultant.

Mr. Spencer oversees the investment management.

Teachers' Retirement System of Louisiana

	(\$ millions)
Total assets	2,609
Defined benefit	2,609
Employer contributions	185
Benefit payments	275

BATON ROUGE, La. — In a move toward specialty management effective Jan. 1, the Teachers' Retirement System of Louisiana redeployed its existing money managers, terminated one and hired five others.

Massachusetts Financial Services; Scudder, Stevens & Clark; and Hibernia National Bank, formerly balanced managers, will oversee bond portfolios. Massachusetts Financial and Scudder were allocated \$450 million each, and Hibernia was tapped for \$200 million.

Citicorp Investment Management, also a former balanced manager, was given \$150 million for equities.

M.D. Sass Investors Services, which managed \$25 million in equities, was terminated because of performance.

The system hired Criterion Investment Management and Center Trust to each manage \$450 million bond portfolios. The fund also hired three equity managers: The Boston Co. for a \$250 million account; INVESCO Capital Management for a \$175 million portfolio; and Eagle Asset Management for \$75 million.

The fund retained SEI Funds Evaluation Services in June after SEI purchased Merrill Lynch Consulting Corp., formerly the system's consultant.

In-house short-term investments decreased \$50 million to \$300 million because the system was more "fully invested," said Jennifer Netterville, investment portfolio specialist. The fund also does the trading for all of its assets.

It invests \$290 million in mortgage-backed securities.

The fund's assets increased 23.6% to \$2.609 billion as of Sept. 30 from \$2.11 billion the previous year.

The asset mix as of Sept. 30 was 16% stocks, 62% bonds, 11% cash equivalents and 11% mortgage-backed securities.

Equity managers: Boston Co.; INVESCO; Eagle Asset; Citicorp.

Bond managers: Massachusetts Financial; Scudder, Stevens & Clark; Hibernia; Criterion; Center.

City National Bank, Baton Rouge, is the custodian.

Key investment personnel are Ms. Netterville and Carleton C. Page, secretary-treasurer.

The cash management survey will be published in the Nov. 2 issue of *Pensions & Investment Age*.

Largest profit-sharing plans (\$ millions)

Fund	Assets
Sears Roebuck & Co.	4,292
Exxon Corp.	3,415
Procter & Gamble Co.	2,761
Bechtel Power Corp.	1,400
Motorola	825
Hewlett-Packard	798
Halliburton Savings Plan	774
Northrop Corp.	714
Martin Marietta Corp.	558
Phillip Morris Inc.	501
Shell Oil Co.	409
Unocal Corp.	354
Cooper Industries Inc.	150
Tetradon Inc.	131
CIGNA Corp.	89
New York Life Insurance Co.	71
ITT Corp.	33
American Stores Co.	10
Raytheon Co.	10
Sun Co.	9
Armo Inc.	7
McDermott International Inc.	5
Ashland Oil Inc.	2
Caterpillar Inc.	2
Tenneco Inc.	1
Total	17,425

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Maryland State Retirement and Pension Systems

	(\$ millions)
Total assets*	6,778
Defined benefit	6,778
Employer contributions	514
Benefit payments	401

*as of June 30, 1986

BALTIMORE — The Maryland State Retirement and Pension Systems experienced rapid growth in internally run portfolios as of June 30.

Total assets run in-house grew 62%, to \$4.1 billion June 30 from \$2.5 billion Sept. 30, 1985. An equity index fund, which replicates the Standard & Poor's 500 stock index, grew 47% to \$2.69 billion from \$1.83 billion, outperforming all the fund's active equity managers, according to Enos Throop Jr., director-equity programs.

The amount managed internally in fixed income more than doubled, to almost \$1.4 billion from \$687 million.

The pension fund grew 35% during the nine months, to \$6.778 billion as of June 30 from \$5.02 billion, primarily because of favorable investment returns but also because of positive cash flow.

The fund appears not to have suffered from the imposition of a two-year moratorium on new investments in securities of companies that have not signed the Sullivan Principles, which deal with apartheid in South Africa, according to Mr. Throop.

During the period, the fund released one equity manager — Johnson, Valliant & Broadfoot.

The fund has \$67 million in mortgages and \$933 million in mortgage-backed securities.

As of June 30, the asset mix was 58% equities, 25% bonds, 3% cash equivalents, 1% in mortgages and 13% in mortgage-backed securities.

Equity managers: Alliance Capital; Atlanta Capital; Capital Guardian; Dimensional Fund Advisors; Eaton Vance; Hagler, Mastrovita & Hewitt; Investment Advisers; Investment Counselors of Maryland; MacKay-Shields; Scudder, Stevens & Clark; State Street Management & Research; Wellington Trust.

Bond managers: Investment Counselors of Maryland; Mercantile Safe Deposit & Trust; Miller,

Anderson & Sherrerd; Morgan Stanley; PIMCO; Standish, Ayer & Wood.

The custodian is First National Bank of Maryland.

Key personnel are Howard J. France, executive director-investments; Mr. Throop; and Arthur M. Lynch Jr., director-fixed-income programs.

Massachusetts State Employees & State Teachers Annuity Funds

	(\$ millions)
Total assets	3,475
Defined benefit	3,475
Employer contributions	300
Benefit payments	na

BOSTON — Total assets in the Massachusetts State Employees & State Teachers Annuity Funds grew 19.1% to \$3.475 billion as of Sept. 30, from \$2.917 billion a year earlier.

During 1986, the fund followed through on its plan to increase the proportion of assets invested in stocks. Alan R. West, chief investment officer, said that as of Sept. 30, about \$900 million, or about 26% of total assets, was invested in stocks, compared with 12.1% a year earlier.

The boost in equities included the fund's first move into international equities, with an allocation of \$25 million. No new managers were hired as a result of the increase in equities.

The fund in 1986 also began investing in real estate equity, with \$12 million, about 0.5% of total assets, invested in a real estate fund Mr. West did not identify. A year earlier the fund reported no investments in real estate equity.

Mr. West said fund trustees had wanted to invest even more in real estate during 1986, but representatives of its investment management consulting firm, Massachusetts Fiduciary Advisors Inc., advised against it because of poor performance in real estate.

About \$1.8 billion was managed internally in fixed income, including mortgage-backed securities. This represents a drop of \$764 million from the previous year, accounted for by the increased equities.

In addition to its international and equity real estate investments, the fund had \$100 million in indexed stocks, \$50 million in foreign fixed income and \$1 million in venture capital.

The fund's asset mix Sept. 30 was 26% stocks, 51% bonds, 2.5% cash equivalents, 0.5% in real estate equity and 20% mortgage-

backed securities.

Equity managers: Colonial Advisory Service; Eaton, Vance Management; Gardner and Preston Moss; Hagler, Mastrovita & Hewitt; Independence Investment Associates; One Federal Asset Management; Rampart Investment Management; Ruggles & Crysedale; Standish, Ayer & Wood; State Street Research; Thorndike, Doran, Paine & Lewis.

Bond managers: Endowment Management & Research; Fiduciary Management Trust; Gardner and Preston Moss; Miller, Anderson & Sherrerd; Pacific Investment Management; Standish, Ayer & Wood; State Street Research.

Real estate managers: First Chicago Investment; Copley Real Estate.

State Street Bank & Trust is the master trustee and custodian.

In addition to Mr. West, key personnel are Robert Q. Crane, treasurer and chairman; and Paul Bullman, commissioner of the State Banking Department.

McDonnell Douglas Corp.

	(\$ millions)
Total assets*	5,735
Defined benefit	4,407
401(k)	1,328
Employer contributions	349

*as of June 30, 1986

ST. LOUIS — According to the 1987 Money Market Directory, McDonnell Douglas has \$5.735 billion in employee benefit assets as of June 1986, up 16.7% from \$4.914 billion a year earlier.

Employer contributions to all benefit plans for 1986 increased 12.9% to \$349 million from \$309 million in 1985, according to Money Market Directory.

According to Money Market Directory, the fund dropped Concord Capital, Dimensional Fund Advisors and Nomura Capital during 1986.

The company's asset mix was unavailable.

Managers: Aetna Capital; Aetna Life; Bankers Trust; Center Trust; LaSalle Advisors; RREEF; TCW Realty.

The master trustee for the pension fund is Bankers Trust.

Key personnel are David Hammerstein, director-retirement funds management; Sheryl Kwiatek, senior investment analyst; Kenneth Velten, plan administrator; and James Tisius, director-financial planning.

Metropolitan Life Insurance Co.

	(\$ millions)
Total assets	2,828
Defined benefit	2,150
Thrift or savings	570
401(k)	50
Other	58
Employer contributions	69
Benefit payments	126

NEW YORK — Metropolitan Life Insurance Co.'s total employee benefit assets climbed 12% during the year ended Sept. 30, to \$2.8 billion from \$2.5 billion a year earlier.

The greatest increases came from its thrift and savings plan assets, including its 401(k) option. Thrift and savings plan assets increased 9.6% for the period to \$570 million from \$520 previously. The 401(k) option doubled in assets to \$50 million, bringing total thrift assets for the insurer to \$620 million at the end of September.

Defined benefit plan assets rose to \$2.15 billion, an 8.6% increase from \$1.98 billion reported a year earlier.

Employer contributions to all plans in 1986 were expected to total \$69 million, while benefits payments to retirees were \$126

million.

Met Life runs all its own pension plan assets internally. It has about \$100 million invested in guaranteed investment contracts and \$215 million in real estate equity.

As of Sept. 30, the asset mix was 25% equities, 60% fixed income, 10% real estate equity and 5% GICs.

The insurer's corporate management office oversees the investment management. J.L. Rubsam, administrator, has day-to-day responsibility.

Michigan State Employees' Retirement Systems

	(\$ millions)
Total assets*	13,580
Defined benefit	13,580
Employer contributions	834
Benefit payments	639

*as of Aug. 31, 1986

LANSING, Mich. — Assets of the Michigan State Employees' Retirement Systems increased 29.1% to \$13.58 billion in the 11 months ended Aug. 31.

Employer contributions increased 5.4% to \$834 million, while benefit payments increased 14.5% to \$639 million.

The fund continued its activity in real estate and venture capital during 1986. It committed \$50 million to the Trammell Crow Equity Partners real estate opportunity fund and \$6 million to Intervent Partners, a venture capital partnership. It also made several direct investments in venture-backed companies.

Late in the year, it also committed \$40 million to Warburg, Pincus Capital Corp.'s venture capital fund and \$20 million to Berkshire Partners' leveraged buy-out fund.

The fund has \$130 million in venture capital, \$65 million in leveraged buy-outs, \$103 million in real estate equity, \$1.46 billion in mortgages and \$980 million in mortgage-backed securities.

The entire fund is managed internally. As of Aug. 31, the approximate asset mix was 44% stocks, 23% bonds, 13% cash equivalents, 11% mortgages, 7% mortgage-backed securities, 1% real estate equity and 1% venture capital.

The funds are composed of the State Employees' Retirement System; Public School Employees' Retirement System; State Police Pension, Accident Disability Fund; Judges' Retirement System; and Probate Judges' Retirement System.

The state treasurer acts as master custodian.

Key investment personnel are W.A. Amerman, director; and G.H. Lindsay, Barry L. Stevens and Michael J. Finn, assistant directors.

Minnesota State Board of Investment

	(\$ millions)
Total assets*	8,658
Defined benefit	8,222
Other	436
Employer contributions	na
Benefit payments	na

*as of June 30, 1986

ST. PAUL, Minn. — The Minnesota board put 10 of its active equity managers on incentive fees, effective July 1.

Firms that agreed to the incentive fee plan were Alliance Capital Management Corp.; IDS Advisory Group; Investment Advisers Inc.; Norwest Bank; BMI Capital Corp.; Hellman, Jordan Management Co. Inc.; and Waddell & Reed Inc. It was unknown which of the remaining managers — Fred Alger Management Inc.; Beutel Goodman Capital Manage-

ment Inc.; Forstmann-Leff Associates Inc. and Lieber & Co. — were also put on incentive fees.

The managers would receive a fee as high as 1% of assets managed if performance exceeded the normal portfolio return by 1,000 basis points. No fee would be paid for underperformance by 600 basis points or more; the objective was to beat the normal portfolio by 200 basis points and get a base fee of 50 basis points, or one-half of a percentage point.

In late September, the board added Superior Ventures to its lineup of venture capital firms, giving it \$6 million.

In May, Beth Lehman replaced Teresa Myers as assistant to the

director.

Total employee benefit assets grew 27.3% during the year ended June 30 to \$8.658 billion from \$6.8 billion. The defined benefit assets grew 20.9% to \$8.222 billion from \$6.8 billion. There was \$435.6 million in other benefits plans, mostly in a 457 plan.

The fund manages \$3.356 billion internally: \$2.475 billion in fixed income and \$881 million in equities. The internal assets increased 24.3% from \$2.7 billion.

The Minnesota board has \$1.994 billion in indexed stocks and \$2.286 billion in a dedicated bond portfolio. It recently received approval to use stock index futures.

There is \$143.5 million commit-

ted for venture capital, including leveraged buy-outs. An additional \$67.5 million is allocated to oil and gas investments.

The fund has \$325 million invested in real estate equity; the amounts allocated for mortgages and mortgage-backed securities were not available.

The approximate asset mix as of June 30 was 45.5% stocks, 41.1% bonds, 8.4% cash equivalents, 3.6% real estate equity and 1.4% venture capital and oil and gas.

Equity managers: Alger; Alliance Capital; Beutel Goodman; BMI; Forstmann-Leff; Hellman, Jordan; IDS; Investment Advisers; Lieber; Norwest Bank (or

Peregrine Capital); Waddell & Reed; Wilshire (passive).

Bond managers: Investment Advisers; Lehman; Miller, Anderson & Sherrerd; Morgan Stanley; Peregrine; Western Asset.

Real estate managers: Aetna Life; Equitable; Heitman; Prudential; RREEF; State Street Bank; TCW.

Venture capital and leveraged buy-out managers: Allied Capital; DSV; Inman & Bowman; Investment Advisers; KKR; Matrix; Norwest Venture Capital; Smith Barney Venture; Summit Ventures; Superior.

Oil and gas managers: AmGO; Apache.

State Street Bank and Trust is



master trustee; Richards & Tierney became the fund's consultant July 1.

Key personnel are Howard Bicker, executive director; Jeff Bailey, assistant executive director; and Roger Henry, equity and fixed-income manager.

Public Employees' Retirement System of Mississippi

	(\$ millions)
Total assets.....	2,716
Defined benefit.....	2,637
Other.....	79
Employer contributions.....	165
Benefit payments.....	132

JACKSON, Miss. — The Public Employees' System of Mississippi terminated four money managers in a move to index 50% of its equity and fixed-income assets.

Scudder, Stevens & Clark and Eaton Vance Management were terminated as equity managers, and Wentworth Hauser & Violich and MacKay-Shields Financial were terminated as fixed-income managers.

The fund hired Wells Fargo Investment Advisors to manage \$300 million in a fixed-income indexed fund, and allotted \$160 million to Lehman Management to track a customized bond index.

The fund had \$250 million in indexed stocks and \$620 million in indexed bonds as of Sept. 30.

The Mississippi system also increased its stock holdings to 22% from the previous year's 16.9% following passage of a state law that increased the ceiling on equity holdings to 35% from 20%.

In a personnel change, Eddie Vandiver became deputy director of investments in March after Charles D. Wilkinson left to pursue personal business interests.

Mr. Vandiver previously had been the investment manager at a casualty insurance company in Jackson, Miss.

Fund assets increased 10.2% to \$2.716 billion as of Sept. 30 from \$2.465 billion a year earlier. The bulk of the money is in a defined benefit plan, although there is \$79 million in a deferred compensation plan.

The fund invests \$506 million in mortgage-backed securities.

The asset mix as of Sept. 30 was 22% stocks, 50.4% bonds, 9% cash equivalents and 18.6% mortgage-backed securities.

Equity managers: INVESCO; Fayed Sarofim; Bankers Trust.

Bond managers: Dreyfus; Criterion Investment; Lehman; Manufacturers Hanover; PIMCO; Wells Fargo.

Trustmark National Bank is the master custodian; SEI is the consultant.

Key personnel are Mr. Vandiver; Ronald D. Logan, investment manager; and Anne D. Middleton, investment technician.

Public School Retirement System of Missouri

	(\$ millions)
Total assets*.....	3,274
Defined benefit.....	3,274
Employer contributions.....	140
Benefit payments.....	129

*as of June 30, 1986

JEFFERSON CITY, Mo. — Assets of the Public School Retirement System of Missouri rose 10.8% to about \$3.27 billion as of June 30, from about \$2.95 billion a year earlier.

Employer contributions increased 18.6% to \$140 million for 1986, while benefit payments increased 12.1% to \$129 million.

The fund has \$10 million in mortgages and \$774 million in mortgage-backed securities.

As of June 30, the approximate asset mix was 10% stocks, 59% bonds, 7% cash equivalents and 24% mortgage-backed securities.

Fund officials had considered diversifying the investment manager lineup, but to date Boatmen's National Bank remains the sole manager. It also is the fund's master custodian. David W. Mustoe, executive secretary, said he could not comment further on possible management changes.

Mr. Mustoe is the fund's key investment staffer.

Mobil Oil Corp.

	(\$ millions)
Total assets.....	3,930

Defined benefit.....	2,180
Defined contribution.....	1,610
Other.....	140
Employer contributions.....	na
Benefit payments.....	na

NEW YORK — The \$3.93 billion in pension fund assets reported by Mobil Oil Corp. relate to the pension plan for the company's 38,095 domestic employees as of Sept. 30.

A year earlier, the company reported total assets of \$4.553 billion in pension fund assets for 69,500 employees, the work force for the company's domestic and overseas operations and its subsidiaries. Those subsidiaries included Montgomery Ward & Co.

Inc., Chicago; Container Corp. of America, Chicago, which Mobil sold in 1986; and W.F. Hall Printing, Chicago, which was sold in November 1985.

During 1986, industry sources reported the corporation hired a "farm team" of two minority-owned money management firms and a firm headed by a woman, which were being groomed to manage assets for the pension fund. Ariel Capital Management Inc., Chicago; Brown Capital Management Inc., Baltimore; and Westwood Management Corp., New York, each was allocated \$1 million of corporate assets.

As of Sept. 30, those three were not among pension fund managers

listed by the company.

Also during 1986, R.B. Hahnen, who had been Mobil's internal manager of money markets and foreign exchange investments, was named manager of corporate benefits-finance, the key position in the pension fund. He replaced Charles Clune, who was expected to retire at the end of 1986.

The fund reported \$420 million in dedicated or immunized bonds; \$70 million in GICs; and \$120 million in mortgage-backed securities as of Sept. 30.

The asset mix as of the same date was 49% in equity accounts and 51% in fixed-income accounts and insurance, including mortgage-backed securities.

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Equity managers: Alliance Capital; Bankers Trust; Capital Guardian; Chase Investors; Citicorp Investment; Jennison Associates; Miller, Anderson & Sherrerd; Fayed Sarofim; State Street Research.

Bond managers: State Street Research; U.S. Trust.

GIC managers: Aetna Life; Metropolitan Life.

U.S. Trust is master trustee. Mr. Hahnen oversees investment management.

Monsanto Co.

	(\$ millions)
Total assets	3,280
Defined benefit	2,520

Thrift or savings/401(k)	660
Other	100
Employer contributions	30
Benefit payments	200

ST. LOUIS — In June, Monsanto Co. hired William Searcy as manager-pension assets to replace Richard McGahan, who joined Fred Alger Management. Mr. Searcy had been director-benefits investment management at ENSERCH Corp., Dallas.

Although the asset mix remained relatively unchanged from a year earlier, the pension fund did make some drastic changes within categories during the 12 months ended Sept. 30.

Its international equity invest-

ments more than doubled during the period, to \$311 million from \$150 million, an increase fund officials attributed mostly to market appreciation.

Its allocation to guaranteed investment contracts dropped 96.7%, to \$10 million from \$300 million, when maturing contracts were used to meet benefit payments.

Total assets of the Monsanto Co. plan grew 13.1% during the 12 months ended Sept. 30, to \$3.28 billion from \$2.9 billion. Defined benefit plan assets grew 9.6%, to \$2.52 billion from \$2.3 billion. The company also had thrift plan assets of \$660 million and an IRA/PAYSOP with \$100 million in

assets; those plans increased 26.7% from a combined \$600 million a year earlier.

Monsanto made employer contributions of \$30 million in 1986, a drop of 75% caused by the company's implementation of the Financial Accounting Standards Board Statement 87. Its benefit payments were \$200 million, an increase of 66.7%.

In addition to its \$311 million in international equity, the fund has \$30 million in international fixed income, \$10 million in oil and gas, \$205 million in real estate equity and \$10 million in mortgages.

Its asset mix as of Sept. 30 was 64% stocks, 18% bonds, 10% cash and 8% real estate equity.

The fund uses stock and bond options, and stock index and fixed-income futures.

Although Monsanto officials would not identify pension fund managers, following is a list of firms believed to be managing fund assets.

Managers: Center Trust; Citicorp Investment; Delaware Investment; Equitable; Fischer, Francis Trees & Watts; Hotchkiss & Wiley; Jennison Associates; LaSalle Advisors; Lincoln Capital; J.P. Morgan; T. Rowe Price; Rowe Price-Fleming; State Street Research.

Northern Trust is master trustee; Frank Russell is investment management consultant.

A.E. Wolfarth, assistant treasurer, oversees investment of the assets with Mr. Searcy.

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New Jersey Division of Investment

	(\$ millions)
Total assets*	16,901
Defined benefit	16,673
Thrift or savings	228
Employer contributions	760
Benefit payments	920

*as of June 30, 1986

TRENTON, N.J. — Buoyed by strong market gains, The New Jersey Division of Investment's equity allocation rose to 47% for the year ended June 30, up from 31% the year before.

Equity returns of 40%, nearly 400 basis points better than the Standard & Poor's 500 stock index, helped boost the fund's stock allocation, explained Roland M. Machold, director.

The value of employee benefit assets increased 35.2% from the year before, to \$16.901 billion from \$12.494 billion.

Deferred compensation and supplemental annuity collective trust assets rose to \$228 million from \$127 million the year before.

Meanwhile, the investment division embarked upon a state-mandated program of divesting South Africa-related securities. A division report said the program had increased state funding requirements, reduced diversification and quality of stock holdings and generated additional transaction costs.

In addition, a bill affecting holdings in companies that do business in Northern Ireland passed the state Senate and awaits action by the Assembly. The legislation would require disclosure about company compliance with the fair employment MacBride Principles.

The fund has \$1.3 billion invested in mortgages and \$425 million in mortgage-backed securities.

The fund uses stock options.

The asset mix as of June 30 was 46% stocks, 40% bonds, 3% cash equivalents, 8% mortgages, and 3% mortgage-backed securities.

A group of 12 banks serves as custodian.

Overseeing the pension fund are Mr. Machold; William F. Mooney, deputy director; and Stephen Kornumpf, assistant director.

New York City Retirement Systems

	(\$ millions)
Total assets	30,839
Defined benefit	29,767
Defined contribution	1,072
Employer contributions	2,470
Benefit payments	2,508

NEW YORK — Four funds of the \$30.839 billion New York City

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Retirement Systems dramatically reshuffled fixed-income assets in 1986, adding and terminating a number of managers.

The \$12.5 billion New York City Employees' Retirement System, the \$1.64 billion New York City Fire Department Pension Fund, the \$4.6 billion New York City Police Department Pension Fund and the \$11.7 billion New York City Teachers' Retirement System redistributed fixed-income assets among corporate, government, mortgage-backed and foreign sectors.

The New York City Retirement Systems' \$30.839 billion in assets comprises \$26.550 billion overseen by City Comptroller Harrison J. Goldin and \$4.289 billion in variable annuity program assets overseen by the trustees of the teachers' system.

Mr. Goldin's office makes all investments for three of the five New York City funds — the employees, the police and the fire funds. In addition, the office oversees fixed-income investments for the two other funds — the more than \$500 million Board of Education Retirement System and the teachers' funds.

During 1986, the New York City Systems initiated a program in which small, minority-owned financial firms with limited pension fund exposure will work with larger, established firms to manage money for the fund.

The employees' fund successfully filed suit in a U.S. District Court to compel American Brands Inc., New York, to place before shareholders a proxy resolution that requires the company to adhere to the MacBride Principles, a standard aimed at companies doing business in Northern Ireland to evaluate fair employment practices.

The New York City systems also approved divestiture of \$156 million of stocks of companies doing business in South Africa.

Employee benefit assets of the fund increased 23.2% to \$30.839 billion as of Sept. 30, from \$25.063 billion the previous year.

Of the \$26.55 billion in assets managed by the comptroller's office, internally managed fixed income was reduced because of maturing New York City securities in the plan. Those assets were transferred to an internally managed cash account.

In restructurings involving \$13.1 billion in fixed-income assets and \$4 billion in transfers to fixed income from cash, officials of the New York City fire and employees' funds chose 20 managers overall, 17 new ones and three existing ones, each handling portions of one or more of the funds.

In its restructuring, the police fund selected 10 new managers, reassigned another and terminated two firms.

Allocations came from the reduction of Fiduciary Trust's account and from terminated accounts handled by Citibank and Lehman Management Co.

In December 1986, the police fund terminated Alliance Capital, reallocating the assets to Dimensional Fund Advisors, an existing manager.

Because of the restructurings, Citicorp, which had managed \$10.2 billion for the city funds in June, lost all but \$290 million, which it manages for the Board of Education fund.

The \$4.289 billion in assets overseen by teachers' plan trustees includes \$3.217 in defined benefit assets and \$1.072 billion in defined contribution assets.

Employer contributions totaled \$510 million as of Sept. 30 and benefit payments to retirees were \$384 million.

The New York City Teachers' Retirement System's variable annuity programs include a tax-deferred annuity, variable fund A, which is invested in equities, and variable fund B, which is invested in guaranteed investment contracts.

The teachers' fund includes \$7.437 billion in fixed income managed by the New York City Comptroller's office.

During the year, Variable Fund A terminated Geo Capital Corp., giving the \$26.5 million the firm had managed to a passive equity account with Wells Fargo. It also reassigned \$15 million from Management Asset Corp. to Wells Fargo.

Fund A also hired Great American Core Investors to manage a \$25 million passive account of American depository receipts replicating the Morgan Stanley Capital International Europe Australia Far East index.

Variable Fund B hired the Bank of America to manage \$106.9 million in a Federal Deposit Insurance Co.-insured time-deposit account, and New York Life Insurance to manage \$224.9 million in GICs.

In December, the fund moved \$100 million from Bankers Trust's indexed stock portfolio to a dynamically hedged portfolio managed by the firm.

The teacher's variable annuity programs had \$2.114 billion invested in indexed stocks as of Sept. 30.

The asset mix as of the same date was approximately 79% equity and 21% GICs.

The New York City system's asset mix, excluding the teachers' fund, was 24% stocks; 44% bonds; 19% cash equivalents; 1% mortgages; 12% mortgage-backed securities.

NYC retirement equity managers: Alliance Capital; Bankers Trust; Batterymarch; BEA Associates; Dimensional Fund Advisors; Lazard Freres; Oppenheimer; Provident Capital; Stein Roe & Farnham.

Teachers' equity managers: Alliance; Axe; Bankers Trust; Concord Capital; John A. Levin; Management Asset; McConnell, Miller; Mellon Bank; Prudential; Scudder, Stevens & Clark; Donald Smith; Trinity Investment; Valuequest; Wells Fargo; Westwood.

NYC retirement fixed-income managers: Bankers Trust; BEA Associates; Bear Stearns Asset; Chase Investors; Citicorp; Fiduciary Trust; Fisher Francis, Trees & Watts; Investment Advisors; Kennedy Associates; Lincoln Capital; Lehman Management; Manufacturers Hanover; Mellon Bank; Miller, Anderson & Sherrerd; Pacific Investment; T. Rowe Price; Putnam Advisory; Rosenberg Capital; Smith Barney; Harris Upham; State Street Bank; Weiss, Peck & Greer; Wells Fargo Investment.

Teachers' fixed-income managers: Bankers Trust; Chase Investors; Fiduciary Trust; Fischer, Francis; Lehman; Mellon Bank; Miller, Anderson & Sherrerd; Pacific Investment; T. Rowe Price; Putnam Advisory; Rosenberg Capital; Smith Barney; Weiss, Peck & Greer; Wells Fargo.

Teachers' GIC managers: Bank of America; Metropolitan; Prudential; New York Life.

NYC's custodian is Citibank. The teachers' fund's master trustee is Irving Trust; the consultant is Rogers, Casey, Barksdale.

At the NYC fund, Marvin L. Damsma, third deputy comptroller; Robert T.C. Wilson, bureau chief; John J. Burns, senior fixed-income analyst; and Lisa M. Malanchuk, senior equity analyst, oversee investments.

At the teachers' fund, key personnel are: Wallace Sullivan, executive director; Patrick Kiernan, assistant executive director; and Diane Sisenwein, portfolio administrator.

New York State Common Retirement Fund

	(\$ millions)
Total assets	31,533
Defined benefit	31,533
Employer contributions	1,600
Benefit payments	1,100

ALBANY, N.Y. — In 1986, the New York State Common Retirement Fund hired United Mutual Life Insurance Co., a black-owned New York firm, to jointly manage a \$100 million equity portfolio previously solely run by Equitable Investment Management Corp.

In addition, a new state law requires the fund to monitor companies in which it invests for compliance with the MacBride Principles. Those principles govern fair employment by U.S. firms in Northern Ireland. The law encourages the fund to invest in companies that make advancements in fighting job bias in Northern Ireland and to sell off stocks of recalcitrant companies.

The fund also filed shareholder resolutions with 121 companies to ask them to withdraw from South Africa unless apartheid is dismantled by May 1987.

The fund allowed the state to skip two annual contributions totaling \$1.4 billion to the fund, but ended a practice of paying contributions two years late. The skipped contributions will be amortized over 17 years, with 8% interest paid on the amount.

In mid-1986, the fund committed to a venture capital partnership run by Bridge Capital, and also invested in Corporate Property Investors, a real estate investment trust.

Also during 1986, the fund committed more than \$300 million into leveraged buy-outs, bringing the total in LBOs to \$380 million.

In late 1985, the fund hired Wells Fargo, Miller, Anderson & Sherrerd and Delaware Investment Advisers as equity managers, and terminated Bank of New York.

Total assets of the fund grew 21.3% in the 12 months ended Sept. 30, to \$31.53 billion from about \$26 billion.

Employer contributions for 1986 were expected to total \$1.6 billion; benefit payments were expected to be \$1.1 billion.

About \$26.9 billion is managed internally: \$9.92 billion in equity; \$13.15 billion in fixed income; \$1.09 billion in short-term instruments; and \$2.7 billion in mortgages.

The internally managed stock index fund rose 42%, to \$9.92 billion, primarily driven by stock market gains.

The fund has \$90 million committed to venture capital, \$59 million in real estate equity, \$2.71 billion in mortgages and \$2.7 billion in mortgage-backed securities.

As of Sept. 30, the fund's asset mix was 45.5% stocks, 33.1% bonds, 3.4% cash equivalents, 0.2% real estate equity, 8.6% mortgages, 8.6% mortgage-backed securities and 0.6% venture capital and LBOs.

Equity managers: Alliance Capital; Capital Guardian; Delaware; Equitable; Lazard Freres; Lord Abbett; Miller, Anderson & Sherrerd; Oppenheimer Capital; J&W Seligman; Shearson American Express; Wells Fargo.

Real estate managers: Corporate Property Investors; Eastdil; Goldman, Sachs.

Venture capital: Bridge Capital; Crossroads; Excelsior; Montgomery Bridge; New York State Business Venture Partnership; Peregrine Ventures; U.S. Ventures.

Leveraged buy-outs: Kohlberg Kravis Roberts; Forstmann Little.

Chase Manhattan is the master trustee; Wilshire Associates was hired as consultant during 1986.

John E. Hull is director of investments and cash management; John J. O'Connor is chief investment officer; and William M. Barrett is director of equities and fixed-income investments.

New York State Teachers' Retirement System

	(\$ millions)
Total assets	20,235
Defined benefit	20,235
Employer contributions	951
Benefit payments	632

ALBANY, N.Y. — The New York State Teachers' Retirement System grew by 32.2% to \$20.235 billion as of Sept. 30, from \$15.303 billion as of June 30, 1985, largely because of good equity performance.

The fund recently began using stock index futures and uses stock options internally as they see fit.

Employer contributions to the pension plan were \$951 million; benefit payments were up 18.8% to \$632 million.

The fund manages \$16.056 billion internally: \$6.2 billion in equity; \$7.433 billion in fixed income; \$343 million in short-term investments; and \$2.080 billion in mortgages.

Short-term investments plunged by nearly \$600 million when the fund added three managers — General American Advisors; Glickenhau & Co.; and Pilgrim, Baxter, Hoyt and Greig — in October 1985.

The fund has \$5.977 billion in indexed stocks; \$304 million invested in real estate equity; \$2.08 billion in mortgages; \$865 million in mortgage-backed securities; and \$50 million protected by portfolio insurance.

The asset mix as of Sept. 30 was 42.5% stocks, 37.9% bonds, 1.5% cash equivalents, 1.5% real estate equity, 10.3% mortgages; 4.3% in mortgage-backed securities and 2% in member loans.

Equity managers: BEA Associates; Sanford C. Bernstein; Beutel, Goodman; General American; Glickenhau; Lehman Management; Manufacturers Hanover Investment; Oppenheimer; and Pilgrim, Baxter, Hoyt and Greig.

Bond manager: Sanford C. Bernstein.

Real estate managers: Aetna; Equitable; Goldman, Sachs; Prudential.

Venture capital managers: Excelsior 2; Mesirrow Capital Partners II; New York State Business Venture; Norstar Venture Partnership.

Bankers Trust is custodian.

Key personnel are Harold N. Langlitz, executive director; Edward J. Reno Jr., securities investment officer; Lowell A. Blom, mortgage officer.

North Carolina Retirement Systems

	(\$ millions)
Total assets*	10,003
Defined benefit	10,003
Employer contributions	744
Benefit payments	463

*as of June 30, 1986

RALEIGH, N.C. — The assets of the North Carolina Retirement Systems increased 14.5% over 12 months to \$10.003 billion (book value) by June 30.

The system is in the process of installing a computer system that will enable its assets to be priced at market value.

In 1986, the fund hired a new real estate equity manager, Security Capital Real Estate Corp., for an undisclosed amount.

The 1986 contribution of \$744

million is from the state and from employees.

All but \$101 million is managed in-house: \$2.114 billion in equities; \$7.763 billion in fixed income; and \$25 million in short-term assets. Outside equity and bond managers act in advisory roles, only.

There is \$125 million invested in real estate equity and \$65 million in mortgages.

The fund uses stock options. The asset mix as of June 30 was 14.5% equities; 74.7% bonds; 3.3% cash equivalents; 1% real estate equity; and 6.5% mortgages.

Equity advisers: Alliance Capital; First Citizens Bank; First Union Capital; NCNB; Thorndike Doran/Wellington; Wachovia Bank.

Bond adviser: Duff & Phelps (credit analysis only).

Real estate managers: Aetna Life; CIGNA Capital; Goldman, Sachs; Security Capital.

Bank of New York is custodian.

C. Douglas Chappell is deputy treasurer and director of the investment and banking division.

Northrop Corp.

	(\$ millions)
Total assets	2,702
Defined benefit	1,988
Defined contribution	714
Employer contributions	120
Benefit payments	40

LOS ANGELES — Northrop Corp. employee benefit assets increased 26.1% to \$2.702 billion as of Sept. 30 from \$2.142 billion a year earlier.

The \$714 million defined contribution plan assets include a profit-sharing plan and 401(k) assets.

Employer contributions decreased 7.7% to \$120 million; benefit payments increased 11.1% to \$40 million.

The asset mix as of Sept. 30 was 68% stocks, 24% bonds and 8% cash.

Equity managers: Capital Guardian; Forstmann-Leff; Jennison Associates; Putnam Advisory; Rosenberg Capital; State Street Research.

Bond managers: Fischer, Francis, Trees & Watts; Jennison Associates.

Bankers Trust is master trustee. Richard B. Lohrer, treasurer, oversees employee benefit assets.

NYNEX Corp.

	(\$ millions)
Total assets	11,962
Defined benefit	10,089
Defined contribution	1,589
ESOP	284
Employer contributions	na
Benefit payments	na

NEW YORK — NYNEX Corp.'s defined benefit fund made its first move into real estate, outside its inherited TREET holdings, and international investments.

But the core of its investment strategy remains passive, with 49%, or \$4.9 billion, of its nearly \$10.1 billion pension fund in stock index and bond index funds as of Sept. 30.

In real estate, the fund split \$70 million among Aldrich, Eastman & Walth; Corporate Property Investors; Heitman Advisory; and John McMahan Associates. It left undisturbed its \$621 million in the Telephone Real Estate Equity Trust, set up by American Telephone & Telegraph Co.

In international, it hired ABD International Management Corp. and Mellon-Pictet International Management Ltd., giving each between \$20 million and \$50 million, although NYNEX would not confirm the hirings.

In other manager changes in 1986, the fund hired Trinity Investment Management and Fidelity Management Trust, both for

Profiles

domestic equities, while it released United States Trust Co. in domestic fixed income.

In the largest chunk of its passive core, NYNEX had \$3.855 billion in equity index funds as of Sept. 30 with American National Bank, Wells Fargo Investment Advisors and Dimensional Funds Advisors. The latter two managers were hired in fall 1985. The amount in equity indexing was up 35.3% from \$2.85 billion a year earlier.

Also, it had \$1.068 billion in indexed bonds, down 11% from the \$1.2 billion the previous year.

NYNEX's total employee benefit assets rose 26.6% in the year ended Sept. 30 to \$11.962 billion from \$9.447 billion.

The employee stock ownership plan alone rose 53.5% to \$284 million.

The fund has \$4.38 million in venture capital and \$691 million in real estate equities.

Its asset mix as of Sept. 30 was 59% stocks, 33% bonds, 1% cash equivalents and 7% real estate equity.

Equity managers (Domestic): American National Bank (Chicago); Batterymarch; Dimensional Fund Advisors; Fidelity Management Trust; Manufacturers Hanover; McCowan Associates; Trinity; TCW; Wertheim.

(International): ABD; Mellon-Pictet.

Bond managers: Boston Co.; Brown Brothers Harriman; Hancock; Jennison; Lincoln Capital; Manufacturers Hanover; Massachusetts Financial Services; Miller, Anderson & Sherrard; Standish, Ayer & Wood; State Street Research.

Real estate managers: Aldrich, Eastman & Walch; Corporate Property Investors; Heitman; John McMahan; TREET.

Venture capital manager: Manufacturers Hanover.

Mellon Bank is master trustee. Overseeing the fund are L.R. Smart, corporate director-finance, and J.E. Chines, director-investment management.

asset mix was 22.5% stocks, 22.4% bonds, 17.1% cash equivalents, 1.2% real estate equity and 36.8% mortgage-backed securities.

Real estate managers: CIGNA; NCNB; Rothschild; Security Capital; Wells Fargo.

The state treasurer is master custodian.

Robert A. McLaughlin is the fund's investment officer.

Ohio Teachers' Retirement System

	(\$ millions)
Total assets	12.484
Defined benefit	12.484
Employer contributions	575
Benefit payments	625

COLUMBUS, Ohio — Assets of the State Teachers Retirement System of Ohio increased about 22.7% to \$12.48 billion as of Sept. 30, from \$10.18 billion a year earlier.

Employer contributions in-

creased 11.7% to \$575 million in 1986 and benefit payments increased 10.6% to \$625 million.

The fund is managed internally. It uses Thorndike, Doran, Paine & Lewis as equity and bond consultant and Thomas Karsten Associates as real estate consultant.

It has \$155 million in dedicated or immunized bond funds, \$16 million in venture capital, \$1.4 billion in real estate equity, \$933 million in mortgages and \$1.2 billion in mortgage-backed securities.

It uses stock options and fixed-income futures.

As of Sept. 30, the approximate asset mix was 29% stocks, 28% bonds, 10% cash equivalents, 13% real estate equity, 11% mortgage-backed securities and 9% mortgages.

The state treasurer is master custodian.

C. James Grothaus is executive director; Stephen A. Mitchell is assistant executive director-in-

vestments; and Daniel M. Szenté, assistant director-investments.

Oregon Public Employees Retirement System

	(\$ millions)
Total assets	6.522
Defined benefit	6.522
Employer contributions	415
Benefit payments	226

SALEM, Ore. — The Oregon Public Employees Retirement System made several changes in its manager lineup during 1986.

In the first quarter, it dropped Glickenhau & Co., moving the assets to six domestic managers and one international manager.

The new managers are: Atlanta/Sosnoff Capital Corp.; Olympic Capital Management; Pinnacle Associates; George B. Springman Inc.; Cutler & Co. Inc.; Thompson/Rubinstein Investment Management; and Nomura Capital Management Inc.

Separately, it also added Cursitor-Eaton as an international equity manager as part of an increase in overseas exposure.

In June, it hired Chase Manhattan Bank as master custodian for fixed income, replacing Manufacturers Hanover Trust.

In July, it boosted its venture capital commitment by allocating \$5 million to Intervent Partners for early stage financing in high-technology companies.

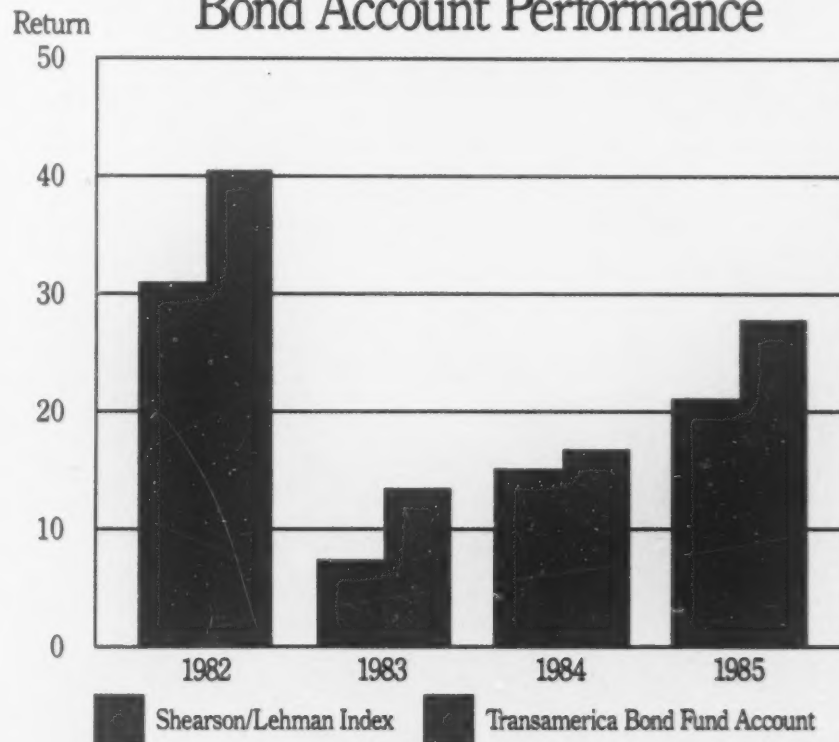
The fund also diversified its real estate portfolio by investing \$26 million in real estate investment trusts and other publicly traded real estate securities, and making its first major moves into mortgage-backed securities.

The fund reported defined benefit assets of \$6.522 billion as of Sept. 30, an increase of 27.9% from the \$5.1 billion reported a year earlier.

Employer and employee contributions to the fund totaled \$415

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Ohio Public Employees' Retirement System

	(\$ millions)
Total assets	13.567
Defined benefit	13.567
Employer contributions	630
Benefit payments	640

COLUMBUS, Ohio — The Ohio Public Employees' Retirement System added Wells Fargo Realty Advisors and Rothschild Inc. as real estate managers in 1986 and terminated Aetna Life & Casualty Co. as a manager in that category.

Assets of the system increased 26% to \$13.567 billion as of Sept. 30, from \$10.76 billion a year earlier. Employer contributions in 1986 were \$630 million, the same as in 1985, while benefit payments rose 12.3% to \$640 million.

All assets but real estate are managed internally. The fund uses Value Line as an equity consultant.

Within the fixed-income category, the system reduced its long bond exposure and went heavily into mortgage-backed securities because of market conditions earlier this year. As of Sept. 30, the bond allocation was roughly half of what it was 12 months earlier and the mortgage-backed allocation roughly doubled.

The fund has \$33 million committed to venture capital, \$163 million invested in real estate equity and \$4.9 billion in mortgage-backed securities.

As of Sept. 30, the approximate

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million, up 1.2%, and benefit payments were \$226 million, up 13%.

The fund manages \$2.8 billion internally, all in fixed income.

It has \$445.1 million invested in overseas equities, an increase of 130.6% from the \$193 million reported for 1985. James C. George, investment manager, attributed the increase to the fund's steadily building up what he called a "very successful sector" and to market appreciation.

It also has \$90 million in venture capital; \$400 million in leveraged buy-outs; \$350 million in real estate equity; \$360 million in mortgages; and \$140 million in mortgage-backed securities.

The fund uses stock options and stock index futures.

As of Sept. 30, the asset mix of the pension fund was 57% stocks, including most of the leveraged buy-out and venture capital assets; 32% bonds, including mortgage-backed securities; 5.4% real estate equity; and 5.6% mort-

gages.

Equity managers (Domestic): Atlanta/Sosnoff; Batterymarch; BEA Associates; Columbia; Cutler; Froley-Revy; General American; Harris Associates; Hotchkis & Wiley; Olympic; Pinnacle; Quest; Rosenberg; Faye S. Sarofim; George B. Springman; Thompson-Rubinstein; and William D. Witter.

(International): ABD; Cursitor-Eaton; Daiwa; Globe-Finlay; Nomura; Rowe Price-Fleming; and Wertheim Phillips.

Real estate manager: Alex. Brown Realty.

LBO manager: Kohlberg, Kravis, Roberts.

Chase is the master custodian for bonds; First Interstate Bank of Oregon is master trustee for stocks. Its investment management consultants are Frank Russell Co. and Wilshire Associates.

Along with Mr. George, other key personnel are Bill Unverzagt, senior investment officer-bonds;

Terry Canby, senior investment officer-mortgages; and Jim Yasutome, senior investment officer-short term.

p

Pacific Gas & Electric Co.

	(\$ millions)
Total assets	3,275
Defined benefit	2,075
Defined contribution	1,200
Employer contributions	130
Benefit payments	90

SAN FRANCISCO — Pacific Gas & Electric Co.'s pension fund made its first move into international during 1986, allocating \$73 million for international equities among Arnhold & S. Bleichroeder

International; Capital Guardian Trust; and Putnam International Advisors.

The company also made a change in its fixed-income and real estate asset management, hiring bond manager Sanford C. Bernstein in place of T. Rowe Price Associates and moving an undisclosed amount from PRISA I, Prudential Realty Group's broad-based open-end real estate fund, into PRISA II, a large-property account.

The real estate shift was made as part of the fund's efforts to develop a real estate program that has a high return but doesn't take a lot of staff time. It currently has \$146 million in real estate equity and \$70 million in mortgage-backed securities.

Also during the year, Sunny Oberoi was named director-pension fund management, replacing Janice Murphy, and Gordon Smith, vice president-finance and treasurer, became chairman of the

investment committee, replacing Stan Skinner.

As of Sept. 30, employee benefit assets at PG&E totaled \$3.275 billion, a 32% increase from a year earlier. The defined benefit assets totaled \$2.075 billion, up 25.4%, and the defined contribution assets, including the 401(k) plan, totaled \$1.2 billion, up 45.1%.

Employer contributions to the plan in 1986 were expected to total \$130 million, compared with 1985's \$122.4 million. Benefit payments were estimated at \$90 million, compared with \$77.8 million a year earlier.

In addition to its international and real estate investments, the PG&E fund has \$135 million in indexed stocks, \$114 million in general account contracts and \$21 million in guaranteed investment contracts.

The asset mix as of Sept. 30 was 65% stocks, 28% bonds (including cash, mortgage-backed securities, GICs and GACs) and 7% in real estate equity.

Equity managers (Domestic): Barrow Hanley Mewhinney & Strauss; Beutel Goodman; Cashman Farrell; Chase; Dodge & Cox; Endowment Management; Frontier; Jundt/Capen; McCowan; Miller, Anderson & Sherrerd; Olympic; Rosenberg Capital; State Street Bank.

(International): Capital Guardian; Bleichroeder; Putnam.

Bond managers: Bernstein; Fischer Francis Trees & Watts; Miller Anderson & Sherrerd.

Real estate managers: Corporate Property Investors; Prudential; Metropolitan Life; RREEF; TCW.

GICs: Metropolitan (defined benefit plan); Hancock, Hartford; New York Life (defined contribution plan).

GACs: Metropolitan; Prudential.

Master trustee is State Street Bank; Frank Russell is consultant.

Overseeing investment management are Mr. Oberoi and Peter K. Corippo, senior analyst.

Pacific Telesis Group

	(\$ millions)
Total assets	8,500
Defined benefit	7,600
Defined contribution	900
Employer contributions	na
Benefit payments	na

SAN FRANCISCO — Pacific Telesis Group's defined benefit fund increased its allocation to international investments to 15% of total defined benefit assets from 10% a year earlier.

Total employee benefit assets were at \$8.5 billion as of Sept. 30, up 34.6% from the \$6.316 billion reported a year earlier. Its defined benefit assets totaled \$7.6 billion, up 33.3%, compared to \$5.703 billion in the same period. Its defined contribution assets totaled \$900 million, up 46.8% from the \$613 million of a year earlier. Fund officials attributed the rise to investment performance.

In the only manager change in 1986, it dropped Chase Investors Management.

Pacific Telesis runs in-house \$195 million in equities and \$85 million in fixed income.

The asset mix as of Sept. 30 was 50% stocks, 15% international equity, 23% bonds, 5% cash and 7% real estate equity.

Equity managers (domestic): Delphi; Dodge & Cox; Hotchkis & Wiley; IDS Advisory; Jundt/Capen; Lord Abbett; Mellon Capital; Morgan Grenfell; Pilgrim Baxter Hoyt & Greig; Rosenberg Capital; Sit Investment; State Street Research; Thompson Siegel & Walmsley; United Capital; Wellington; Wells Fargo Investment.

(International): ABD; Capital Guardian; Fidelity International; Morgan Grenfell; NM Rothschild.

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Profiles

Bond managers: CMB Investment; Discount Corp.; Dodge & Cox; Fischer Francis Trees & Watts; PIMCO; Solomon Asset; Wells Fargo Investment; Western Asset.

Real estate managers: Jones Lang Wootton; LaSalle; TCW.

Bank of America is master trustee. Frank Russell is consultant.

Overseeing the fund are Richard E. Holmes, director-investment management; Jeffrey L. Winter, manager-investment planning and strategy; and H.R. Fetherston, manager-investment administration and real estate.

Pennsylvania Public School Employees' Retirement System

	(\$ millions)
Total assets*	10,078
Defined benefit	10,078
Employer contributions	821
Benefit payments	706

*as of June 30, 1986

HARRISBURG, Pa. — Last spring, the Pennsylvania Public School Employees' Retirement System trustees adopted a restrictive investment policy that eventually could result in complete divestment of South Africa-related securities.

Fund officials also initiated a \$200 million hedged index fund, to be managed by J.P. Morgan, and a new portfolio of \$250 million in mortgage-backed securities to be managed internally.

The moves, which had been planned for some time, were funded from short-term investments.

Earlier in the year, the fund hired Dreman & Embry to manage \$100 million in equities and Trivest to manage \$15 million in venture capital.

For options, the fund replaced Bankers Trust with Webster Management when the fund's portfolio manager at Bankers moved to Webster. Oppenheimer Option Management was retained.

For fixed income, trustees plan to allocate \$250 million each to Criterion Investment Management and Pacific Investment Management and \$150 million to the Putnam Advisory Co. Another \$150 million will be placed in an equity fund with Evaluation Associates, the fund's consultant.

Allocations of \$20 million to Foston and \$2 million to Genesis Seed are expected to be made soon in venture capital.

As of June 30, fund assets grew to \$10.078 billion, up 28.8% from almost \$7.825 billion as of Sept. 30, 1985.

Employer contributions rose 7.6% to \$821 million from \$763 million as of Sept. 30, 1985, and benefits paid out rose 32% to \$706 million from \$535 million.

The fund manages \$1.35 billion internally in short-term investments.

The fund has \$668 million invested in real estate equity; \$270 million in mortgages; \$576 million in mortgage-backed securities; and \$10.5 million in venture capital as of June 30.

The asset mix as of June 30 was 33.8% stocks, 37.8% bonds, 13.3% cash equivalents, 6.6% real estate equity, 2.7% mortgages, 5.7% mortgage-backed securities and 0.1% venture capital.

Equity managers: Bankers Trust; Cashman & Farrell; Delaware; Dreman & Embry; Mellon Bank; Miller Anderson & Sherrerd; Oppenheimer; Provident.

Bond managers: Glenmede Trust; Loomis Sayles; Mellon Bank; Miller, Anderson & Sherrerd; Pittsburgh National Bank.

Real estate managers: Fidelity Bank; Jones Lang Wootton.

Options managers: Oppenheimer; Webster.

Venture capital: Century IV;

NEPA.

First Pennsylvania is the master custodian.

James A. Perry is executive director; Clay B. Mansfield is chief investment officer.

Pennsylvania State Employees' Retirement System

	(\$ millions)
Total assets	6,730
Defined benefit	6,730
Employer contributions	370
Benefit payments	535

HARRISBURG, Pa. — The Pennsylvania State Employees' Retirement System hired four equity managers for greater exposure to small- and medium-capitalization stocks.

New managers and allocations are: Geewax, Terker & Co., \$50 million; Pilgrim, Baxter, Hoyt & Greig, \$100 million; First Pennsylvania Bank, \$25 million; and

McGlinn Capital Management, \$50 million.

Mellon Bank was allocated an additional \$50 million, bringing the bank's small-cap fund to \$164.2 million by Sept. 30.

In addition, the state hired two high-yield bond managers — Delaware Investment Advisers and W.R. Huff Asset Management — for \$50 million each. About 1.5% of the system's assets are invested in high-yield bonds.

Pennsylvania dropped Philadelphia Savings Fund Society as manager of a mortgage portfolio of \$465.8 million, replacing it with Latimer & Buck Inc.

The commitment to venture capital is expected to increase. Five agreements yet to win final approval would add \$37 million to the state's venture capital exposure.

Total assets of the system increased 24.2% to \$6.73 billion as of Sept. 30 from \$5.418 billion a year earlier.

Contributions decreased 17.8% to \$370 million from \$450 million a year earlier. Benefit payments rose 20.2% to \$535 million from \$445 million.

Investment in indexed stocks increased to \$1.264 billion from \$998 million a year before. Indexed bonds jumped to \$633 million from \$525 million.

The fund has \$379.1 million in real estate equity; \$437.6 million in mortgages; \$565.8 million in mortgage-backed securities and \$66 million in venture capital.

The asset mix as of Sept. 30 was 41.6% in stocks, 30.9% in bonds, 6.7% in cash equivalents, 5.6% in real estate equity, 6.5% in mortgages, 8.4% in mortgage-backed securities and 0.3% in venture capital.

Equity managers: Fred Alger; Alliance; Barrow, Hanley, Me-whinney & Strauss, First Pennsylvania Bank; Geewax, Terker; Glickenhau; McGlinn Capital; Mellon Bank; Pilgrim, Baxter,

Hoyt & Greig; Trinity; Wells Fargo.

Bond managers: Delaware; W.R. Huff; Miller, Anderson & Sherrerd; Payden & Rygel; Latimer & Buck.

Real Estate managers: Aetna; Corporate Property Investors; F.I.A.; Hancock; JMB; Prudential; Security Capital.

Wilshire Associates is consultant.

Kenneth G. Mertz II is chief investment officer. David D. Burnett and Karen Nicely are investment analysts.

Procter & Gamble Co.

	(\$ millions)
Total assets*	2,984
Defined benefit	152
Profit-sharing	2,761
401(k)	71
Employer contributions	175
Benefit payments	196

*as of June 30, 1986

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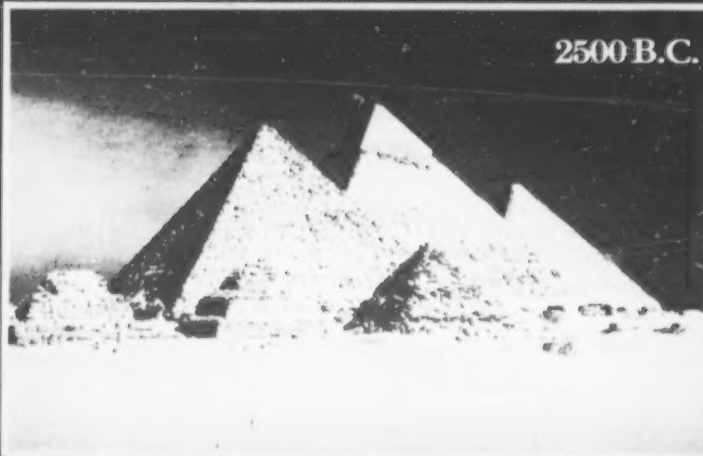
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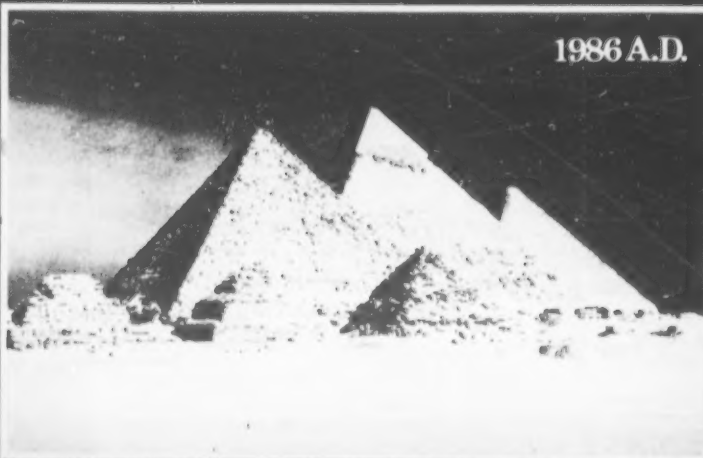
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Gamble Co.'s total employee benefit assets were up 40.6% in the year ended June 30, to \$2.984 billion from \$2.123 billion.

Its profit-sharing fund, P&G's principal retirement vehicle, rose 31.8% to \$2.761 billion from \$2.095 billion. The company attributed the rise mainly to the gains in the Procter & Gamble common stock the fund holds. About 64.4% of the profit-sharing fund is in P&G stock, and for the year ended June 30 the stock rose 42% to 80% from 56%.

In the same period, its defined benefit fund rose 44.3% to \$152 million from \$28 million. P&G attributed the rise to the acquisition of Richardson-Vicks, whose defined benefit assets total about \$125 million. The \$28 million reported last year represented its Norwich unit's defined benefit assets.

In addition, both Richardson-Vicks and Norwich have 401(k) plans, whose assets total \$71 million.

P&G's contribution to all its plans in 1986 was \$175 million up 9.4% from \$160 million the year before, while benefits paid were \$196 million, up 28.1% from \$153 million.

P&G runs its \$2.76 billion in profit-sharing assets in-house. The internally run portfolio was split with \$1.777 billion in equities (all P&G stock), \$170 million in cash equivalents and \$814 million in GICs, bought from Aetna. Through the 401(k) plans, P&G holds another \$50 million in GICs.

The profit-sharing trust allows employees 55 and older to put money in a retirement distribution trust of mutual funds run by T. Rowe Price Associates, which has about \$1 million. The P&G shares are the only P&G securities the profit-sharing fund holds.

Griffin Group runs Norwich's fund, while the other managers reported below run Richardson-Vicks' assets.

Norwich's defined benefit fund's asset mix as of June 30 was 55% equities, 37% bonds, 8% cash, while Richardson-Vicks's defined benefit fund's allocation was 59% equities, 32% bonds and 9% cash. The combined defined benefit funds' asset mix is 58% stocks, 33% bonds and 9% cash.

P&G's profit-sharing fund had an asset mix as of June 30 of 64.4% stock, 29.4% GICs and 6.2% cash equivalents.

Equity managers: Atlanta Capital; Dimensional Fund; Gluckenhau; Griffin Group; IDS Advisory.

Bond managers: Atlanta; Griffin; Western Asset.

Profit-sharing retirement trust mutual funds: T. Rowe Price.

SEI is consultant.

Norwich's master trustee is Northern Trust, while Richardson-Vicks' master trustee is Bank of New York. P&G's profit-sharing fund has internal trustees.

Overseeing the assets are E.H. Eaton, vice president-treasurer; C.P. Slater, assistant treasurer; and J.R. Smith, manager-pension plan coordination.

Prudential Insurance Company of America

	(\$ millions)
Total assets	4,507*
Defined benefit	3,614
Thrift or savings	893
Contributions	30
Benefit payments	130

*P&I Age estimate

NEWARK, N.J. — Employee benefit assets of Prudential Insurance Co. totaled \$4.507 billion as of Sept. 30, according to a *Pensions & Investment Age* estimate based on the company's own figures as Dec. 31, 1985.

Prudential launched a 401(k) plan June 30, but didn't provide asset information.

All assets are managed internally.

Prudential has \$144 million in indexed stocks; \$349 in international equity; \$109 million in international fixed income; and \$552 million in real estate equity.

The asset mix as of Dec. 31, 1985, was 51% stocks, 27% fixed income, 17% real estate equity and 5% cash equivalents.

Investment management is overseen by a committee of three senior officers.

r

RJR Nabisco Inc.

	(\$ millions)
Total assets	3,164
Defined benefit	2,346
Thrift or savings	817
Employer contributions	75
Benefit payments	96

WINSTON-SALEM, N.C. — RJR Nabisco Inc.'s employee benefit assets increased by 34% during the year ended Sept. 30.

Continuing a program of consolidation of investment managers that began after R.J. Reynolds acquired Nabisco Brands Inc. in 1985, the company terminated 10 managers and hired five new managers, according to Paul Tyner, manager, funds administration.

Managers terminated in the defined benefit plan were Bankers Trust Co., Forstmann-Leff Associates Inc., MacKay-Shields Financial Corp. and McKenzie, Walker Investment Management. Newly hired were Campbell Advisors, C.J. Lawrence Management, Cooke & Bieler Inc. and Schafer Capital Management Inc. RJR Investment Management Co. also began managing some of the equity funds.

The equity 401(k)/thrift managers terminated were Alliance Capital Management and Bernstein-Macaulay Inc. Spears-Benzac was added.

Fischer, Francis, Trees & Watts was dropped as a bond manager and RJR Investment Management, formed last year, started managing the in-house dedicated bonds and some real estate funds.

NBW Venture Partners was terminated as a venture capital manager.

Mr. Tyner said RJR Nabisco is no longer using stock options or stock index futures, but still uses fixed-income futures. It terminated options managers Bear, Stearns Asset Management and The Travelers.

Gwain Gillespie, formerly executive vice president and chief financial officer and John Dowdle, formerly senior vice president-financial services, retired from RJR Nabisco. Gene Hoots, formerly president of RJR Investment, took a position with Reich & Tang.

RJR Investment Management had \$736 million in Reynolds pension assets under management as of Sept. 30, up from \$402 million the previous year. Of the \$736 million, \$592 million is in dedicated bond funds and \$144 million is in equity.

For 1986, its employer contribution to the benefit plan was \$75 million. Benefit payments totaled \$96 million.

The fund also reported \$20.2 million in foreign equities, \$18 million in venture capital and \$125 million in real estate equity.

Equity managers (defined benefit): Batterymarch; Campbell Advisors; Capital Guardian; Cooke-Bieler; Delaware Investment; C.J. Lawrence; Lieber; Reich & Tang; Schafer Capital; Warburg Pincus.

(401(k)/thrift): Spears-Benzac; Vanguard; Wilkens & Nanovic.

Bond managers (defined benefit): PIMCO; Scudder, Stevens.

(401(k)/thrift): Wachovia Bank.

Real estate managers: Copple; Mellon Capital; Prudential; Wachovia.

International manager: Globe Finlay.

Venture capital managers: Advent; Concord Partners; DeMuth, Folger & Terrance; Fairfield Venture Partners; Plant Resources.

The approximate asset mix as of Sept. 30 was 56% stocks, 30% bonds, 8% cash equivalents, 5% real estate equity and 1% venture capital.

Master trustee is Wachovia and consultant is Hamilton, Johnston.

Key investment personnel include: A. Ed Robinson, chief financial officer; Mac Baines, senior vice president and treasurer; and Robert Bennett, president, RJR Investment Management.

Rockwell International

	(\$ millions)
Total assets*	8,122
Defined benefit*	5,986
Thrift or savings	2,136
Employer contributions	77
Benefit payments	na

*P&I Age estimate

PITTSBURGH, Pa. — The Rockwell International defined

benefit plan grew to \$5.986 billion as of Sept. 30, *Pensions & Investment Age* estimates.

That represents a rise of 14.7% from an estimated \$5.218 billion a year earlier.

The savings plan had \$2.136 billion as of Sept. 30, according to a document filed with the Securities and Exchange Commission.

According to the company's 1986 annual report, pension costs shrank to \$77 million in 1986 from \$178 million the year before. The decrease was principally due to an increase in the interest rate assumption to 9% from 8%, a change in the salary increase assumption to 5% from 6%, and investment performance.

Of the \$2.136 billion in the savings plan, 74%, or \$1.591 billion, is in Rockwell stock. Another \$142.5 million is in common stocks (excluding Rockwell stock) and \$232 million is in group annuity contracts. Most of the remainder is in short-term investments.

Equity managers (savings plan): Capital Guardian; First Interstate of California; Hotchkiss & Wiley; National Bank of Detroit; Fayed Sarofim.

Bond manager (savings plan): First Interstate.

Custodians for the savings plan are First Interstate and National Bank of Detroit.

Defined benefit plan managers (according to Money Market Directory): Beutel, Goodman; Boston Co. Real Estate Counsel; Cashman, Farrell; Chase Investors; CIGNA Asset Advisers; First Pacific; Guardian Life; InterFirst Bank Dallas; InterFirst Investment Management; Manufacturers Bank; Mellon Bank; Metropolitan Life; J.P. Morgan; Morgan Stanley; PRIMECAP; Scudder, Stevens & Clark; Seafirst Bank; Security Pacific Investment; Security Pacific Bank; Siphon & Meyers; Stralem; Tower Capital; Transamerica; Travelers Insurance; Travelers Investment; Vanguard; Waite & Correnti; Western Asset.

Mellon Bank is master trustee. Key personnel overseeing the fund are: E. William Altstaetter, vice president-insurance and benefits administration; Lee H. Cramer, treasurer; and Susan Leathers, director-pension assets management.

S

City & County of San Francisco Employees Retirement System

	(\$ millions)
Total assets	2,723
Defined benefit	2,723
Employer contributions	240
Benefit payments	160

SAN FRANCISCO — The City & County of San Francisco Employees Retirement System signed management contracts with three international equity and two international bond managers in 1986 and allocated \$200 million to investment in international securities.

The three international equity managers signed and given an initial allocation of \$33.3 million each were: Capital Guardian Trust Co.; Morgan Grenfell Investment Services Ltd.; and Oechsle International Advisors.

Signed for international bond management were: First Chicago Investment Advisors and Warburg Investment Management International. The international bond managers were allocated \$50 million each.

Trustees for the retirement system also decided to allocate up to \$50 million for venture capital, but the venture capital managers have not been selected.

Equity managers hired during the 12 months ended Sept. 30 were: Furman Selz Capital Management; Hanson Investment Management Co.; McCullough, Andrews & Cappiello Inc.; Nicholas-Applegate Capital Management and Hahn Holland & Grossman. Fred Alger Management Inc., which bought Crocker Investment Management, was retained.

For the 12 months ended Sept. 30, total assets for the retirement system increased 26.2% to \$2.723 billion from \$2.157 billion.

The system manages \$1.188 billion internally, \$80 million in equity and \$1.108 billion in fixed income.

San Francisco has \$146 million in an equity index fund, \$109 million in real estate equity, \$19 million in mortgages and \$255 million in mortgage-backed securities.

The asset mix as of Sept. 30 was 32% stocks, 49% bonds, 5% cash equivalents, 4% real estate equity, 9% mortgage-backed securities and 1% mortgages.

Equity managers: (Domestic) Fred Alger; Axe Core Investors; Furman Selz; Hahn Holland & Grossman; Hanson; Loomis,

Funds investing in mortgages (\$ millions)

Fund	
AAA-CREF	11,200
New York State Common Fund	2,712
California Public Employees	2,631
New York State Teachers	2,080
Michigan State Employees	1,460
New Jersey Division of Investment	1,300
Texas Teachers	1,057
Ohio Teachers Retirement System	933
California State Teachers	895
Washington State Investment Board	523
Hawaii State Employees	445
Alaska State Retirement Systems	440
Pennsylvania State Employees	438
Alabama Retirement Systems	422
Detroit Retirement Systems	367
Oregon Employees Retirement System	360
Pennsylvania School Employees	270
Los Angeles County	248
Arizona State Retirement System	225
Boeing Co.	210
Navistar International Corp.	210
Nevada Public Employees	200
Teamsters Western Conference	152
Wisconsin Investment Board	150
Kentucky Teachers Retirement	130
Westinghouse Electric Corp.	125
New York City Retirement Systems	124
Teamsters Central States	101
Ohio School Employees	79
Idaho Public Employees	71
International Operating Engineers	70
Maryland State Retirement	67
Chicago Employees	66
North Carolina Retirement Systems	65
Tektron Inc.	60
USX Corp.	60
Bakery & Confectionery Workers	51
New Mexico Public Employees	45
Goodyear Tire & Rubber Co.	41
West Virginia State	36
Arkansas Teacher Retirement System	35
Georgia State Retirement Systems	35
Virginia Retirement System	33
Southern Baptist Convention	31
Baltimore Employees	30
Minnesota Mining & Manufacturing Co.	30
Atlantic Richfield	27
Travelers Insurance Co.	24
Utah State Retirement Board	23
Sun Co.	21
World Bank	20
San Francisco Employees	19
Aetna Life & Casualty Co.	18
Louisiana State Employees	16
Halliburton Savings Plan	13
Hawthorn-Park	12
Missouri School Retirement System	10
Monsanto	10
United Methodist Church	6
Schmeckers Black Co.	3
International Paper Co.	3
Houston City, Fire and Police	2
Southern New England Telephone	2
Total	30,341

Profiles

Sayles; McCullough, Andrews & Capiello; Nicholas-Applegate; George Springman.

(International) Capital Guardian; Morgan Grenfell; Oechsle.

Bond managers: (Domestic) Bankers Trust; Lehman Asset; MacKay-Shields; Scudder, Stevens & Clark.

(International) First Chicago; Warburg.

Real estate manager: Coldwell Banker.

Bankers Trust Co. is custodian; Callan Associates is consultant.

Key personnel overseeing the investment management of assets for the system are DeWitt F. Bowman, chief investment officer, and Carolyn Hamilton, assistant chief of investments.

Sears, Roebuck & Co.

	(\$ millions)
Total assets	6,784
Defined benefit	2,492
Profit-sharing	4,292
Employer contributions	na
Benefit payments	na

CHICAGO — The employee benefit assets of Sears, Roebuck & Co. increased 23.8% to \$6.784 billion as of Sept. 30 from \$5.481 billion a year earlier. Defined benefit assets increased 30.1% to \$2.492 billion from \$1.915 billion.

During the year, Sears terminated an account run by Putnam International Advisors Inc. and pulled the money in-house, at least temporarily. The move was prompted by the departure of 11 Putnam International professionals who started their own firm, Oechsle International Advisors.

Sears manages \$2.2 billion in-house through Sears Investment Management Co. Of this, \$1.096 billion is in equities, \$810 million in fixed income, \$181 million in short-term investments and \$148 million in other investments, including venture capital, private placements and preferred stock.

The fund has \$618 million in indexed stocks; \$250 million in foreign equities; \$64 million in venture capital; and \$65 million in real estate equity. It uses stock options and stock index futures.

As of Sept. 30, the approximate asset mix was 43% domestic stocks, 33% bonds, 7% cash equivalents, 3% real estate equity and 14% venture capital, foreign and miscellaneous investments.

Real estate manager: Aldrich, Eastman and Walch.

International managers: Capital Guardian, Fidelity International.

Continental Illinois is the fund's master trustee.

Key personnel of Sears Investment Management are David V. Dootson, president, and David H. Williams and Michael F. Norton, vice presidents.

Shell Oil Co.

	(\$ millions)
Total assets	5,811
Defined benefit	2,751
Profit-sharing	409
Thrift or savings	2,502
401(k)	149
Employer contributions	300
Benefit payments	400

HOUSTON — Leonard Chaikind was named administrator of the Shell employee benefit funds in February, replacing Robert MacIntire, who retired after more than 20 years.

Total assets of the employee benefit funds at Shell increased 16.7% for the year ended Sept. 30, to \$5.811 billion from \$4.979 billion.

Shell officials were reviewing the plan's real estate posture in 1986 and are considering the types and asset allocation to real estate.

The employer contribution to all plans was \$300 million.

Benefits paid to employees in

1986 were \$400 million, up 23% from \$325 previously.

Approximately \$1.2 billion of Shell's assets are managed internally, \$189 million in equities, \$973 million in fixed income and \$38 million in short-term investments.

Shell has \$566 million in indexed stocks; \$73 million in guaranteed investment contracts; \$4 million in international fixed income; \$307 million in real estate equity; and \$188 million in mortgage-backed securities.

The asset mix of the pension fund as of Sept. 30 was 51% stocks, 26% bonds, 2% cash equivalents, 11% real estate equity, 3% GICs and 7% mortgage-backed securities.

Equity managers: Criterion; Dodge & Cox; Equitable; First City; Kemper; Mellon; Faye Sarofim; Wells Fargo.

Bond manager: Texas Commerce.

Real estate managers: Aetna;

Equitable; Hancock; Prudential.

GIC managers: Aetna; Equitable; Hancock; Metropolitan; New York Life; Prudential; Travelers.

Frank Russell is the fund's investment management consultant.

Key personnel are Mr. Chaikind and J.B. Kloehr, deputy administrator.

South Carolina Retirement System

	(\$ millions)
Total assets*	4,996
Defined benefit	4,996
Employer contributions	220
Benefit payments	181

*as of June 30, 1986

COLUMBIA, S.C. — The South Carolina Retirement System increased its exposure in bonds about 8% during the 12 months ended June 30, and decreased its commitment to mortgage-backed securities about 41%.

The market value of the defined

benefit assets was \$4.996 billion.

The employer contribution was \$220.4 million; the fund will pay out \$180.9 million in benefits.

As of June 30, the fund had \$613 million in mortgage-backed securities.

The asset mix, based on par, as of June 30 was 82% bonds, 8% cash equivalents and 10% mortgage-backed securities.

The custodian for the fund is Morgan Guaranty Trust. Its investment management consultant is Jamison, Eaton & Wood.

Key personnel are Grady L. Patterson Jr., state treasurer; Sandy A. Gee, deputy treasurer; and Michael L. Windham, senior assistant.

Southwestern Bell Corp.

	(\$ millions)
Total assets	6,209
Defined benefit	5,466
Defined contribution	1
Savings and 401(k)	742

Employer contributions	61
Benefit payments	217

*as of June 30, 1986

ST. LOUIS — Southwestern Bell Corp.'s pension fund in 1986 made its first commitments to real estate equity (outside its inherited TREET real estate fund from American Telephone & Telegraph Co.) and venture capital.

In real estate, it hired John McMahan Associates for \$50 million, Heitman Advisory Corp. for \$100 million and Boston Co. Real Estate Counsel for \$75 million.

In venture capital, the fund committed \$60 million to First Chicago and \$40 million to Crossroads Management Partners.

In international, it released Putnam International Advisors after its principals left to start their own firm. The fund split Putnam's \$30 million between IDS International and Nomura Capital Management, both hired in December 1985 as its first in-

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ternational managers along with Fidelity International and Putnam.

It also released equity manager First City Bank of Houston, its only other manager change.

With RepublicBank Dallas, its master trustee, it began a domestic securities lending program.

Larry A. Kohn left as district manager-pension fund to become a vice president in New York of the pension service department of Goldman, Sachs & Co.

His replacement, Charles Weaver, had been Southwestern Bell's manager of investor relations.

The company's total employee benefit assets were \$6.209 billion as of June 30, its latest reporting date. They were up 34.9% from the \$4.616 billion reported nine months earlier. In the same period, its defined benefits assets rose 28.6% to \$5.466 billion, up from \$4.25 billion. And its combined savings and 401(k) assets more than doubled to \$742 million from \$366 million in the nine months.

The company attributed the rise to market growth.

Total employer contributions fell 72% to a company estimated \$61 million in 1986 from \$217 million the year before.

Benefit payments rose 12.4% in 1986 to a company estimated \$217 million from \$193 million in 1985.

A dedicated bond portfolio set up in October 1985 and now worth \$1.42 billion was the main reason for the contribution decline, company officials reported.

The pension fund has a conservative core, despite moving into new investment areas. In all, 60%, or \$3.265 billion, of its defined benefit assets were in indexed stocks and dedicated or immunized bond portfolios as of June 30.

The amount in stock funds tracking the Standard & Poor's 500 stock index and the Wilshire 3000 increased by 36% to \$1.845 billion from \$1.358 billion as of Sept. 30, 1985. With the increase, the indexed stocks amounted to 55% of its equities and 33% of its total pension assets. The \$1.420 billion in dedicated portfolios amounted to 84% of its bond investments and 26% of its total fund.

As of June 30, its pension fund had \$169 million in international investments, \$282 million invested in real estate, \$50 million committed to oil and gas and \$100 million committed to venture capital.

The asset mix as of June 30 was 62.1% stocks, 31% bonds 5.3% real estate equity, 0.6% oil and gas, and 1% other.

Equity managers (domestic): Franklin Portfolio; Geo Capital; InterFirst Dallas; Jennison; Mercantile Trust; Nicholas Applegate; Pilgrim Baxter Hoyt & Greig; RepublicBank Dallas; Texas Commerce Bank; Wells Fargo.

Equity managers (international): Fidelity International, IDS International; Nomura Capital Management.

Bond managers: Boatmen's; Jennison; Mercantile.

Real estate managers: Boston Co.; Heitman; McMahan; TREET.

Venture capital managers: First Chicago; Crossroads Management.

Oil and gas: InterFirst Bank Dallas.

Savings plan managers: Bankers Trust; Beutel Goodman; Brown Brothers Harriman.

RepublicBank Dallas is master trustee for the pension plan. Bankers Trust is master trustee for the savings plan.

Consultant is Buck Pension Services.

Key investment personnel are Roger Wohler, assistant treasurer-corporate finance; Mary Ann Devine, district manager-investments and administration; and Mr. Weaver.

Teachers Insurance and Annuity Association — College Retirement Equities Fund

	(\$ millions)
Total assets	52,300
Defined contribution	52,300
Employer contributions	2,700
Benefit payments	760

NEW YORK — In November, TIAA-CREF, the nation's largest pension fund, filed resolutions with 10 companies in which it is invested to rescind their poison pill plans and submit future such plans to a shareholder vote.

In July, the fund called on U.S. corporations to withdraw from South Africa as soon as possible, a break from its past policy of seeking those companies to be a positive force for change there.

The fund submitted 28 shareholder resolutions to companies in which it held stock in the first part of its effort to persuade 160 portfolio corporations to withdraw from South Africa.

During 1986, the giant fund averted loss of its tax-exempt status, as was proposed under the House of Representatives' tax reform bill.

The fund also weathered continued criticism from outside groups on the restrictions placed on participant access to assets, among other issues.

In October, Clifton R. Wharton, formerly chancellor of the State University of New York, was named the organization's chairman and chief executive officer. He begins his new job Feb. 1.

During the year ended Sept. 30, the fund grew 30.8% to \$52.3 billion from \$40 billion. The assets are managed internally.

The fund has \$15 billion in indexed stocks. It also increased its commitment to international equities 79%, to \$3.4 billion as of Sept. 30 from \$1.9 billion a year earlier, due to a combination of market appreciation and increased investments. International fixed income declined 32%, to \$100 million from \$147 million.

By Sept. 30, real estate equity had grown to \$1.28 billion from \$1.12 billion the year before, while mortgages climbed to \$11.2 billion from \$8.92 billion. The fund also has \$800 million invested in mortgage-backed securities.

Investments in leveraged buy-outs totaled \$130 million, but fund officials declined to reveal in which limited partnerships it had invested.

The overall asset mix was 49.3% stocks, 22.9% bonds, 1.9% cash, 2.5% real estate equity, 21.4% mortgages, 1.5% mortgage-backed securities and 0.5% in other investments.

Morgan Guaranty and Citibank are the custodians for TIAA; Bankers Trust and Chase Manhattan are custodians for CREF.

Key personnel for TIAA are J. Daniel Lee Jr., executive vice president, TIAA investments; David B. Bullett, senior vice president, TIAA securities; and John A. Somers, senior vice president, TIAA mortgage and real estate.

Key CREF personnel are James S. Martin, executive vice president, CREF investments; Henry A. Frantzen, senior vice president, CREF international; and C. Oscar Morong, senior vice president, CREF security research.

A special section on leasing will be published June 15.

Teamsters, Central States, Southeast and Southwest Areas Pension Fund

	(\$ millions)
Total assets	7,070
Defined benefit	7,070
Employer contributions	685
Benefit payments	739

CHICAGO — The Teamsters, Central States, Southeast and Southwest Areas Pension Fund added four managers and switched its custodian in the last quarter of 1986.

It hired American National Bank of Chicago and Wells Fargo Investment Advisors to run equity index funds, INVESCO Capital Management Inc. to run an active equity portfolio and MacKay-Shields Financial Corp. to manage fixed income.

In addition, it dropped State Street Bank and Trust Co. as custodian, replacing it with Mellon Bank.

No investment managers were released in the year.

The fund's assets grew 22.4% in the year ended Sept. 30, to \$7.07 billion from nearly \$5.775 billion.

The fund was still involved in two matters arising from unauthorized use of its property for toxic wastes disposal. The Labor Department sued Equitable Life Assurance Society of the United States on the fund's behalf over the former use of property it owns in Alabama for toxic wastes disposal. Equitable had been manager of the property for the fund.

In the other case, the fund was still trying to reach an agreement with Equitable, a group of nuns and the state of New Jersey over the cleanup of chemical wastes on property the fund sold to the nuns. Equitable was the fund's manager of the New Jersey property.

PepsiCo, after losing a court ruling, paid the Central States \$26.1 million in withdrawal liability.

The fund sold the last of its casino investments, the Aladdin Hotel in Las Vegas. At its peak in 1976, the fund had \$249 million in Nevada gaming properties.

Also during the year, the fund began using stock index futures.

George Lehr, executive director of the fund, was appointed to the federal government's ERISA Advisory Council and bipartisan task force.

Robert W. Haack, former New York Stock Exchange president and former chief executive of Lockheed, replaced George D. Gould, chairman of Madison Resource, as the Central States Teamsters' asset monitor adviser. Mr. Gould had been designated an undersecretary of the treasury.

Terrence S. Moloznik, the fund's director-asset monitoring, left to join the staff of the International Brotherhood of Teamsters pension fund, based in Washington. His duties were assigned to others now on staff at Central States.

Among the fund's investments as of Sept. 30 were \$2.45 billion in indexed stocks, \$207 million in indexed bonds and \$1.14 billion in dedicated and immunized bonds. A decision made in 1986 to scrap the dedicated and immunized portfolio was never carried out, although the fund now plans to unwind the portfolio.

The fund also was running \$38 million in cash equivalents in-house.

The asset mix as of Sept. 30 was 46.5% stocks, 27% bonds, 6.5% cash equivalents, 0.2% real estate equity, 0.1% guaranteed investment contracts, 1.6% mortgages and 18.1% mortgage-backed securities.

Equity managers: American National Bank; Bankers Trust;

Funds investing in mortgage-backed securities (\$ millions)

Fund	Assets
California Public Employees	7,782
Ohio Public Employees	4,940
New York City Retirement Systems	3,190
New York State Common Fund	2,700
Texas Teachers	2,446
California State Teachers	2,103
E.I. du Pont de Nemours & Co. Inc.	1,528
Teamsters Central States	1,282
Ohio Teachers Retirement System	1,240
Los Angeles County	1,122
Florida Board of Administration	1,036
Michigan State Employees	980
Maryland State Retirement	933
Alabama Retirement Systems	910
New York State Teachers	865
TIAA-CREF	800
Missouri School Retirement System	774
S. Calif. Food/Commercial Workers	714
Massachusetts State Employees	695
Colorado Public Employees	678
South Carolina Retirement System	613
Washington Investment Board	612
Pennsylvania School Employees	576
Pennsylvania State Employees	566
Texas Employees Retirement System	534
Mississippi Public Employees	506
USX Corp.	500
Wisconsin Investment Board	500
Texas County & District	446
Illinois Municipal Retirement Fund	428
New Jersey Division of Investment	425
Indiana State Teachers	400
Illinois Teachers	384
Kentucky Retirement Systems	364
Connecticut Trust Funds	327
Ohio School Employees	321
Ohio Police and Fire	311
American Airlines	300
Nevada Public Employees	297
Louisiana Teachers	290
Iowa Public Employees	282
San Francisco Employees	255
Boeing Co.	210
Arizona State Retirement System	200
Virginia Retirement System	200
Shell Oil Co.	188
World Bank	155
Detroit Retirement Systems	152
Indiana Public Employees	140
Oregon Employees Retirement System	140
Boilermakers-Blacksmiths	135
Idaho Public Employees	132
Louisiana State Employees	127
Los Angeles Fire and Police	124
Georgia State Retirement Systems	120
International Operating Engineers	120
Mobil Oil Corp.	120
Exxon Corp.	113
Utah State Retirement Board	109
Inland Steel Industries Inc.	105
Kentucky Teachers Retirement	105
Milwaukee City Employees	100
Tennessee Consolidated Retirement	100
UMWA Health & Retirement Funds	100
Minnesota Mining & Manufacturing Co.	95
Oklahoma Teachers	95
Chicago Employees	93
Illinois State Board	90
Kansas Public Employees	90
Southern Baptist Convention	90
Los Angeles City Employees	87
Los Angeles Water & Power	85
Pacific Gas & Electric Co.	70
Presbyterian Church U.S.A.	50
Chicago Teachers	49
Massachusetts PRIT	47
Arkansas Teacher Retirement System	46
Deere & Co.	45
Sun Co.	41
Dart & Kraft Inc.	40
Delta Air Lines Inc.	40
United Technologies Corp.	30
Motorola	25
Aluminum Co. of America	22
Navistar International Corp.	22
Aetna Life & Casualty Co.	21
National Rural Electric Co-op	20
Conoco Inc.	20
West Virginia State	18
Xerox Corp.	18
Commonwealth Edison Co.	17
Halliburton Savings Plan	15
National Intergroup Inc.	14
Philadelphia Municipal	6
J.C. Penney Co. Inc.	5
Southern New England Telephone	5
Ashland Oil Inc.	4
Total	50,493

BEA Associates; Equitable; INVESCO; Mellon Capital; Wells Fargo.

Bond managers: Fiduciary Trust; Lincoln Income Group; MacKay-Shields; Miller Anderson

Profiles

Sherrerd; Morgan Guaranty; T. Rowe Price; Putnam; State Street Bank.

Real estate managers: Karsten; Eastdil.

The fund's named fiduciary is Morgan Stanley Group. Its custodian is Mellon.

Overseeing the assets are Mr. Lehr; Thomas L. Hoops, financial and administrative services director; and Daniel P. DiCaro, financial group director.

Teamsters, Western Conference

	(\$ millions)
Total assets*	7,571
Defined benefit	7,571
Employer contributions	500
Benefit payments	500

*as of Aug. 31

SEATTLE — The Western Conference of Teamsters Pension Trust added two managers in 1986, ending Prudential Insurance Co.'s position as sole manager, even though the insurer still runs the bulk of the assets.

The fund assigned \$180 million to Wells Fargo Investment Advisors to run in an equity index fund and \$22 million to Fidelity Management Trust to run in active equities. At year end, the fund reported the accounts stood at \$240 million and \$42 million, respectively. Prudential retains about \$7.38 billion in fixed income and real estate.

Also, the fund hired Boston Safe Deposit as its first custodian.

Alan D. Biller & Associates was hired as investment consultant, indicating further management changes may be in the offing in 1987.

The fund's employee benefit assets, all in a defined benefit plan, totaled \$7.571 billion as of Aug. 31, an increase of 27.7% from the \$5.929 billion reported 11 months earlier.

In addition to the stock index fund with Wells Fargo, the fund had \$112 million in a bond index fund, run by Prudential, as of Aug. 31; \$6.44 billion in a dedicated portfolio, which includes \$1.94 billion in what the sponsor calls a fixed dollar general insurance account, all with Prudential; \$663 million in real estate equity; and \$152 million in mortgages. The fund holds some mortgage-backed securities in its bond index fund, but a breakdown of the securities was not available.

The asset mix as of Aug. 31 was 2.7% stocks, 60.9% bonds, 8.8% real estate equity, 2% mortgages and 25.6% fixed dollar general insurance account.

Equity managers: Fidelity; Wells Fargo.

Bond manager: Prudential.

Real estate manager: Prudential.

The key personnel at the fund overseeing the assets are Owen Bennett and Joseph Ballew, trust co-chairmen.

Tennessee Consolidated Retirement System

	(\$ millions)
Total assets	5,340
Defined benefit	5,340
Employer contributions	293
Benefit payments	168

NASHVILLE, Tenn. — Tennessee Consolidated Retirement System increased its commitment to international by 340% to \$176 million as of Sept. 30 from \$40 million a year earlier because of a new state law allowing the fund to invest up to 11% of assets in foreign securities. The previous lid on foreign investment was 1% of assets.

The fund has \$94 million in international equities and \$82 million in international fixed income.

The fund put \$100 million into mortgage-backed securities be-

cause officials said the sector was more attractive than in previous years.

Assets of the fund jumped 25.7% to \$5.34 billion as of Sept. 30 from \$4.249 billion the previous year.

All of the fund's assets are managed in-house. As of Sept. 30, the fund's asset mix was 35% stocks, 31.5% bonds, 10% cash equivalents, 20.5% mortgage-backed securities and 3% international equities. The fund uses stock options.

Chase Manhattan is custodian. Dewey Collins Jr. is chief investment officer.

Employees Retirement System of Texas

	(\$ millions)
Total assets*	4,310
Defined benefit	4,310
Employer contributions	158
Benefit payments	171

*as of Aug. 31, 1986

AUSTIN, Texas — The Employees Retirement System of Texas increased its commitment to mortgage-backed securities by five percentage points during the 12 months ended Aug. 31 to \$534 million to take advantage of favorable yields and the widening spreads with U.S. Treasury securities.

Total assets of the fund increased 30.6% to \$4.31 billion as of Aug. 31 from \$3.3 billion on Sept. 30, 1985.

All of the system's assets are managed internally. INVESCO Capital Management is the system's equity adviser. Duff & Phelps is as fixed-income adviser. Wilshire Associates is consultant.

The asset mix as of Aug. 31, 1986 was 17% stocks, 67% bonds, 2% cash equivalents and 14% mortgage-backed securities.

Clayton T. Garrison is executive director; Nancy G. Goedel is director of investments; Stephen P. Arnold is assistant director of investments.

Teacher Retirement System of Texas

	(\$ millions)
Total assets*	13,198
Defined benefit	13,198
Employer contributions	676
Benefit payments	729

*as of Aug. 31, 1986

AUSTIN, Texas — Clark Manning, deputy executive secretary of the Teacher Retirement System of Texas, announced in October he was leaving to become head of a new Lomas & Nettleton Co. investment management subsidiary in Dallas. Mr. Manning had served nearly 14 years with the system. He was replaced by Joe Perrone, assistant investment officer—real estate.

In addition Bob Davis, the system's assistant investment officer—fixed income, announced his intention to retire.

Early in the year, the Texas state auditor issued a report

clearing the system of any wrongdoing in connection with a \$172 million bond swap in 1984. The special audit was prompted by a complaint from a former fund employee.

Texas Teachers closed a more than \$116 million mortgage investment in two major hotel properties and funded a \$58 million commitment to mortgages by the third quarter of 1986. In the four years since the fund started its program, it has invested approximately \$1.6 billion.

Total assets increased 18% to \$13.198 billion as of Aug. 31, from \$11.188 billion as of Sept. 30, 1985.

All the system's assets are managed internally. Thorndike, Doran, Paine & Lewis serves as investment management adviser.

The system had \$1.057 billion invested in mortgages and \$2.446 billion in mortgage-backed securities.

The asset mix as of Aug. 31 was

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30% stocks, 42.2% bonds, 2.4% cash equivalents, 6.9% mortgages and 18.5% mortgage-backed securities.

Bruce Hineman is executive secretary.

Textron Inc.

	(\$ millions)
Total assets	2,502
Defined benefit	1,930
Profit-sharing	131
Thrift or savings	441
Benefit payments	95

PROVIDENCE, R.I. — Textron Inc.'s employee benefit assets totaled \$2.502 billion as of Sept. 30. That included \$1.93 billion in defined benefit assets; \$131 million in profit-sharing assets; and \$441 in thrift, savings and 401(k) assets. The latter was as of Aug. 31.

Benefit payments for 1986 were \$95 million.

A total of \$1.177 billion is managed internally; \$350 million in

equity, \$490 million in fixed income, \$195 million in short-term, and \$142 million in other.

The fund has \$15 million in oil and gas; \$70 million in leveraged buy-outs; \$20 million invested in real estate equity; and \$60 million in mortgages.

The approximate asset mix of pension assets as of Sept. 30 was 41.7% stocks, 36.3% bonds, 11.9% cash, 1% real estate, 6.2% mortgages and 2.9% other.

Equity managers: Alliance; Batterymarch; Sanford Bernstein; Continental Illinois; Delaware Advisers; Harris Trust; HT Investors; Manufacturers National Bank of Detroit; Thorndike, Doran; Trinity.

Bond managers: Alliance; Continental Illinois; Harris Trust; HT Investors; NBD Detroit.

Real estate: Prudential.

Bankers Trust is master trustee.

Richard Watson, vice president-pension investments, oversees the fund.

Union Carbide Corp.

	(\$ millions)
Total assets	3,200
Defined benefit	2,880
Thrift or savings	300
Other	20
Employer contributions	30
Benefit payments	200

DANBURY, Conn. — Total assets for the Union Carbide Corp. pension fund increased 11% in the year ended Sept. 30, to \$3.2 billion from \$2.88 billion.

Union Carbide terminated its defined benefit plan, recapturing \$500 million of an \$800 million surplus and putting \$300 million in a continuing plan.

Fund executives during the pe-

riod also created a thrift or savings plan, which had \$300 million as of Sept. 30.

As part of the termination, Carbide negotiated a new form of annuity contract under which Prudential Asset Management Co. guarantees payment of the annuities to vested participants, but Carbide retains full discretion over the investment management of the assets. Under this arrangement, Carbide benefits from investment returns above those required to provide the annuities.

Also, James A. O'Connell retired as director of pension fund investment and was replaced by M.F. Hoben, who had been manager-trust investments at Exxon Corp.

As of Sept. 30, most of the assets were managed internally — \$2 billion in fixed income, \$400 million in equities, \$100 million in short-term instruments and \$90 million in real estate.

Union Carbide has \$90 million

in real estate equity. The fund uses stock options and stock index futures.

The asset mix as of Sept. 30 was 17% stocks, 77% bonds, 3% real estate equity, 1% cash equivalents and 2% annuities.

Manufacturers Hanover is master trustee.

Key personnel are Mr. Hoben; R.B. Burstein, bond manager; and L.R. Fuller, equity manager.

Unisys Corp.

	(\$ millions)
Total assets	3,880
Defined benefit	2,440
Thrift or savings	241
401(k)	1,199
Employer contributions	123
Benefit payments	166

DETROIT, Mich. — The Unisys Corp. pension fund is a new entry to *Pensions & Investment Age's* listing of the nation's largest pension funds.

Unisys was formed from the acquisition last year by Burroughs Corp. of Sperry Corp.

Although company officials had not yet decided exactly how the two plans were going to be merged, *P&I Age* combined the assets for this listing at the request of Unisys officials.

During the past year, one equity manager — Metropolitan Life Insurance — was terminated by Sperry when it phased out handling of separate accounts. The company hired two equity managers — State Street Research & Management and Chase Manhattan Bank, which is using stock index futures to hedge Sperry's \$326 million in indexed stocks.

The combined employee benefit assets totaled \$3.88 billion as of Sept. 30, a 17.8% increase from the \$3.295 Sperry and Burroughs had combined a year ago.

Sperry's employee benefit assets climbed 12.4% for the year through Sept. 30, to \$2.81 billion from \$2.5 billion. Of the \$2.81 billion, \$1.61 billion was in a defined benefit plan and \$1.2 billion was in a 401(k) plan.

Sperry's employer contribution was \$77 million, and its benefit payments, \$126 million.

Sperry manages \$1.028 billion in house: \$592 million in equities; \$323 million in fixed income; \$100 million in short-term instruments; and \$13 million in other investments, mainly venture capital.

Some \$326 million of its assets are in indexed stocks, \$217 million in dedicated or immunized bond funds, \$891 million in guaranteed investment contracts, \$112 million in international equities, \$15 million in international bonds, \$3 million in other international investments, \$10 million in venture capital and \$5 million in mortgage-backed securities.

The asset mix as of Sept. 30 was 41% stocks, 19% bonds, 8% cash equivalents and 32% GICs.

Burroughs' employee benefit assets increased 34.8% to \$1.072 billion in the year ended Aug. 31, from \$795 million. Of the total, \$831 million is in defined benefit plans and \$241 million in thrift or savings plans.

Employer contributions were \$46 million and benefit payments, \$40 million.

Burroughs hired one fixed-income manager, M.D. Sass Investors, during the year.

The Burroughs fund has \$252 million in indexed stocks; \$84 million in dedicated or immunized bond funds; \$12 million in GICs; \$19 million in venture capital; \$78 million in real estate equity; and \$68 million in mortgage-backed securities.

The asset mix as of Aug. 31 was 70% stocks, 13% bonds, 6% cash equivalents, 9% real estate equity, and 2% venture capital. Fund officials divide mortgage-backed

Funds investing in real estate equity (\$ millions)

Fund	Assets	Fund	Assets
American Telephone & Telegraph Co.	2,078	Amoco Corp.	97
California Public Employees	2,025	Detroit Retirement Systems	92
Ohio Teachers Retirement System	1,434	Minnesota Mining & Manufacturing Co.	92
TIAA-CREF	1,280	Union Carbide Corp.	90
NYNEX Corp.	891	Chrysler Corp.	85
Pennsylvania School Employees	868	ITT Corp.	84
Teamsters Western Conference	663	Kentucky Retirement Systems	81
Florida Board of Administration	582	General Foods Corp.	80
United Nations	580	Grimman Corp.	80
Westinghouse Electric Corp.	560	Aetna Life & Casualty Co.	79
Connecticut Trust Funds	558	Goodyear Tire & Rubber Co.	78
Prudential Insurance Co.	552	Nevada Public Employees	72
California State Teachers	524	Standard Oil Co.	72
Exxon Corp.	454	Travelers Insurance Co.	70
Pennsylvania State Employees	379	Hospital/Health Care Employees	69
Oregon Employees Retirement System	350	Ohio Police and Fire	68
Wisconsin Investment Board	350	Idaho Public Employees	68
Minnesota State Board	325	American Stores Co.	66
Shell Oil Co.	307	GTE Corp.	65
New York State Teachers	304	Sears Roebuck & Co.	65
Ameritech	300	Bechtel Power Corp.	64
U.S. WEST Inc.	250	CIGNA Corp.	64
Southwestern Bell Corp.	242	K mart Corp.	63
Virginia Retirement System	277	Continental Can Co.	62
United Technologies Corp.	265	Navistar International Corp.	60
Allied-Signal Inc.	230	Raytheon Co.	60
Colorado Public Employees	230	Texaco Inc.	60
UMWA Health & Retirement Funds	230	New York State Common Fund	59
Washington State Investment Board	226	Dow Chemical Co.	56
Caterpillar Inc.	223	National Intergroup Inc.	56
Metropolitan Life Insurance Co.	215	Houston City, Fire and Police	55
Monsanto	205	World Bank	55
Xerox Corp.	204	Massachusetts PRIT	54
Eastern Air Lines & Pilots	200	Trans World Airlines	54
UAL Inc.	200	Kansas Public Employees	51
Boilermakers-Blacksmiths	195	Chicago Employees	47
Illinois Universities	193	United Methodist Church	45
Ohio School Employees	193	Unocal Corp.	45
Utah State Retirement Board	187	IAM National Pension Fund	44
Atlantic Richfield	186	Southern New England Telephone	42
Ford Motor Co.	175	Eli Lilly and Co.	38
Sun Co.	166	Kentucky Teachers Retirement	35
LTV Corp.	164	Presbyterian Church U.S.A.	34
Ohio Public Employees	163	Conoco Inc.	32
Owens-Illinois	162	New York Life Insurance Co.	31
Alaska State Retirement Systems	161	Florida Power & Light Co.	29
Illinois State Board	160	Southern Baptist Convention	29
Pacific Gas & Electric Co.	146	E.I. du Pont de Nemours & Co. Inc.	23
Delaware State	125	Tennessee Valley Authority	23
Illinois Teachers	125	Deere & Co.	21
North Carolina Retirement Systems	125	Milwaukee City Employees	20
RJR Nabisco	125	Textron Inc.	20
Los Angeles County	121	Philip Morris Inc.	16
Hughes Aircraft Co.	120	New Mexico Public Employees	15
Iowa Public Employees	113	Massachusetts State Employees	12
San Francisco Employees	109	S. Calif. Food/Commercial Workers	12
Hercules Inc.	107	Southern California Edison	11
Honeywell Inc.	107	Episcopal Church Pension Fund	10
Aluminum Co. of America	105	Southern Co.	9
Hawai State Employees	105	Halliburton Savings Plan	8
International Paper Co.	105	Teamsters Central States	8
J.C. Penney Co. Inc.	103	Alabama Retirement Systems	4
Michigan State Employees	103	Georgia State Retirement Systems	3
Illinois Municipal Retirement Fund	101	Arizona State Retirement System	3
Inland Steel Industries Inc.	99		
Amoco Inc.	96	Total	26,161

Profiles

securities between bonds and cash.

Equity managers (Sperry): Chase Manhattan; INVESCO; Mellon Bank; Mellon Pictet; Mercator; T. Rowe Price; Putnam; State Street Research & Management; Thorndike Doran Paine & Lewis; Travelers; Wellington Management; Wells Fargo Investment Advisors.

(Burroughs): Fred Alger; Concord; Geewax, Terker; Lazard Freres; Liberty Square; Mellon Capital Management; Nicholas-Applegate; NWQ; Pacific Financial Research; PRIMECAP; Thomson Horstmann & Bryant; United Capital Management.

Fixed income (Burroughs): Harris Trust and Savings Bank; M.D. Sass Investors.

Real estate (Burroughs): Coldwell Banker; JMB; LaSalle Advisors.

Venture capital (Burroughs): Manufacturers Hanover Trust Co. Chase Manhattan Bank is Sperry's master trustee. Northern Trust Co. is master trustee for Burroughs savings plan; Harris Trust is Burroughs' master trustee.

Leon J. Level, Unisys vice president and treasurer, and David A. White, Unisys corporate director-capital management and trust investments, oversee both funds.

UAL Inc.

	(\$ millions)
Total assets	2,600
Defined benefit	1,600
Defined contribution	1,000
Employer contributions	86
Benefit payments	110

CHICAGO — UAL Inc. switched to a mutual fund-like investment management approach for the then-\$925 million United Air Lines Pilot Variable plan. As part of the switch, developed with Frank Russell Co., United hired nine new managers, retained four and dropped six.

The managers hired, and their portfolios, were: Frank Russell Trust Co., government fixed income; Boston Safe Deposit & Trust Co., Standard & Poor's 500 stock index fund; BEA Associates Inc. and Sanford C. Bernstein Inc., intermediate fixed income; Barrow Hanley Mewhinney & Strauss, income- and value-oriented equities; Jundt/Capen Associates, growth-oriented equities; Geo Capital Corp., Verus Capital and Jundt/Capen, aggressive special equities; Mercator Asset Management, international equities; and Boston Safe, money market fund.

The managers retained, and their portfolios, were: Thorndike Doran Paine & Lewis, domestic growth equities; Capital Guardian Trust Co., international equities; Discount Corp. of New York, short-term securities; and Trinity Investment Management Corp., income- and value-oriented equities.

The managers dropped, and their portfolios, were: Batterymarch Financial Management, Jennison Associates Capital Corp. and Lincoln Capital Management Co., all in domestic equities; G.T. Capital Management Inc., international equities; Wells Fargo Investment Advisors, S&P 500 stock index fund; and Harris Trust and Savings Bank, government fixed income.

The variable plan also hired Frank Russell Trust as master trustee, replacing National Bank of Detroit, and Boston Safe for record keeping, previously handled internally.

UAL postponed indefinitely the termination of two defined benefit plans covering pilots and flight attendants.

Lawsuits filed by the two employee groups delayed the terminations. Eventually, the drop in interest rates, increasing the pres-

ent value of accrued liabilities, meant termination was no longer an attractive alternative for the airline.

The company did complete the termination of three other plans during 1985, recapturing \$136.8 million.

UAL officials had announced in 1985 they intended to recapture \$962 million through the termination of five plans then with \$2.6 billion total assets.

During 1986, the company hired David J. Dykstra, formerly manager of insurance and pensions of Midecon Corp., to replace Robert J. Gillette as director-pension assets.

Mr. Gillette left to join Frank Russell Co. as a vice president-client executive and senior investment consultant.

As of Sept. 30, UAL had employee benefit assets totaling \$2.6 billion, down 23.8% from the \$3.411 billion as of June 30, 1985. Mr. Dykstra attributed the de-

cline to the three plan terminations.

Defined benefit assets declined 43.8% because of the terminations, while defined contribution assets increased 76.7%. Mr. Dykstra attributed the increase in defined contribution assets to strong investment performance and increased contributions.

Employer contributions were \$86 million and benefit payments, \$110 million.

UAL manages \$700 million in defined benefit assets internally, all in fixed income. The defined benefit plan also has \$700 million invested in a stock index fund and \$200 million in real estate equity.

As of Sept. 30, the approximate asset mix of defined benefit assets was 44% stocks, 44% bonds and 12% real estate equity.

Equity manager: Wells Fargo.
Real estate managers: LaSalle Partners; PM Realty; RREEF.

National Bank of Detroit is the

master trustee for the defined benefit plan. Frank Russell is the fund's consultant.

Mr. Dykstra oversees the investment management of the employee benefit assets.

United Mine Workers of America Health & Retirement Funds

	(\$ millions)
Total assets	4,223
Defined benefit	4,223
Employer contributions	500
Benefit payments	400

WASHINGTON — The United Mine Workers of America Health & Retirement Funds underwent a major restructuring during 1986, terminating 10 investment managers and hiring nine.

Five equity managers were dropped: Batterymarch Financial Management; Torray Clark; Pioneer Management; Thompson, Siegel & Walmsley; and Tower

Capital Management.

Those five were replaced with eight: Barrow, Hanley, Mewhinney & Strauss; Brignoli, Curley & Roberts; Concord Capital Management; Dreman & Embury; Lazard Freres Asset Management; Loomis, Sayles; The Windsor Fund; and Wells Fargo Investment Advisors.

In fixed income, two managers were dropped: Lehman Management and T. Rowe Price Associates.

The fund also dropped Bankers Trust as cash manager, an act that may have been prompted by cash-flow considerations.

The multiemployer fund grew 24.3% during the 12 months ended Sept. 30, to \$4.223 billion from \$3.398 billion. Growth was impeded somewhat when a separate plan for construction workers was established with \$80 million of its assets.

Employer contributions during 1986 totaled \$500 million and

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benefit payments, \$400 million.

The plan runs about \$550 million internally, \$500 million in a bond indexing program and \$50 million in short-term assets.

It also has \$300 million in indexed stocks; \$1.6 billion in dedicated or immunized bonds; \$230 million in real estate equity; and \$100 million in mortgage-backed securities.

It uses fixed-income futures and applies dynamic hedging on \$500 million of its equity assets.

The asset mix as of Sept. 30 was 37% stocks, 49% bonds, 7% cash equivalents, 5% real estate equity and 2% mortgage-backed securities.

Equity managers: Argus Investors; Barrow, Hanley, MeWhinney & Strauss; Brignoli, Curley & Roberts; Concord Capital; Denver Investment; Dreman & Embry; Lazard Freres; Loomis, Sayles; Warburg, Pincus; Wells Fargo; Windsor Fund.

Bond managers: Criterion Investment; Loomis, Sayles; J.P. Morgan; STW Fixed Income.

Real estate managers: Equitable; Goldman, Sachs; Metropolitan Life; Prudential; RREEF; State Street; TCW Realty.

The fund uses Boston Safe Deposit & Trust Co. as custodian.

Key personnel are Jerry N. Clark, executive director, and Charles S. Stephens, director of investments and treasurer.

United Nations Joint Staff Pension Fund

	(\$ millions)
Total assets	5,884
Defined benefit	5,884
Employer contributions	340
Benefit payments	350

UNITED NATIONS — Pierre Henchoz replaced Timothy P. Prince as chief of the investment management section at the United Nations Joint Staff Pension Fund. Mr. Henchoz previously was with Banque Cantonale Vaudoise, Lausanne, Switzerland.

Assets for the fund increased 35.1% in the year ended Sept. 30, to \$5,884 billion from \$4,354 billion a year earlier.

Both employer contributions and benefit payments were lower in 1986: contributions were down 8.8% to \$340 million and benefits payments were down 4.4% to \$350 million.

The fund is internally managed except for \$580 million in real estate assets. Names of its real estate advisers were not available.

Of the internally managed assets, \$3 billion is in equity; \$1.77 billion in fixed income and \$534 million in short-term assets.

Fiduciary Trust Co. of New York provides investment advice and is the fund's custodian.

The fund had nearly half of its assets invested overseas: \$1.48 billion in equities, \$1.1 billion in fixed income; and \$175 million in short-term and real estate investments. This represents an 85% increase from the previous year, which fund officials attributed to market appreciation and an increased allocation.

As of Sept. 30, the fund's asset mix was 50% stocks, 30% bonds, 9% cash equivalents, and 11% real estate equity.

In addition to Mr. Henchoz, key personnel are J. Richard Foran, controller, and Henry Ouma, deputy chief, investment management section.

United Technologies Corp.

	(\$ millions)
Total assets	6,108
Defined benefit	4,758
Profit or savings	1,350
Employer contributions	360
Benefit payments	195

HARTFORD, Conn. — United

Technologies Corp. in November agreed to provide credits of \$90 million to the Department of Defense because two of its pension plans reached the full-funded limitation status.

In October, the fund cut back international equity because it was 70% overweighted with respect to its target of 20%.

Employee benefit assets at United Technologies increased 18.6% to about \$6.1 billion as of Sept. 30 from \$5.15 billion a year earlier.

Defined benefit assets increased 17.5% to about \$4.8 billion as of Sept. 30 from about \$4 billion a year ago.

Managers terminated during the year include five for equity, Connecticut National Bank, CIGNA, HLM, Management Asset and Olympic Capital Management; one for fixed income, Miller Anderson Sherrerd; two for international equity managers, Putnam International Advisors and

Batterymarch Financial Management; and two for real estate, Citibank and InterFirst Investment Management.

The fund hired its first international fixed-income managers, four additional venture capital managers, two domestic fixed-income managers and two real estate managers.

It has \$265 million in real estate equity; \$30 million in mortgage-backed securities; \$291 million in indexed stocks; \$33 million in a dedicated or immunized bond portfolio; \$576 million in international equities; \$132 million in international fixed income; \$26 million in venture capital; \$10 million in oil and gas; and \$70 million in leveraged buy-outs.

The fund uses stock options and stock index futures. Portfolio insurance or dynamic hedging is used on a nominal amount of the assets.

The asset mix as of Sept. 30 was 35% equities, 29% annuities, 11%

fixed income, 2% cash equivalents, 12% international equities, 6% real estate equity, 3% international fixed income and 2% venture capital and leveraged buy-outs.

("Nominal" investments in mortgage-backed securities, oil and gas, and GICs were not accounted for in the asset mix.)

Equity managers (Domestic): Bankers Trust; Brignoli, Curley & Roberts; Citibank; Fidelity; Hellman Jordan; Jennison Associates; Lehman Management; Nicholas Applegate; Sanford Bernstein; Trinity Investment; TCW; Value Line; Wertheim; Wright Investors.

(International): A & S Bleichroeder; ABD; Prudential; Swiss Bank PMI; Schroder Capital; State Street.

Fixed-income managers (Domestic): CIGNA; Delaware; Jennison; Loomis Sayles; Morgan Stanley; MacKay-Shields; Neuberger & Berman; Scudder Ste-

vens; TCW; Travelers; W.R. Huff. (International): First Chicago; N.M. Rothschild.

Real estate managers: Aetna; Babson; CIGNA; Eastdil; Equitable; Prudential; Public Storage; Security Capital.

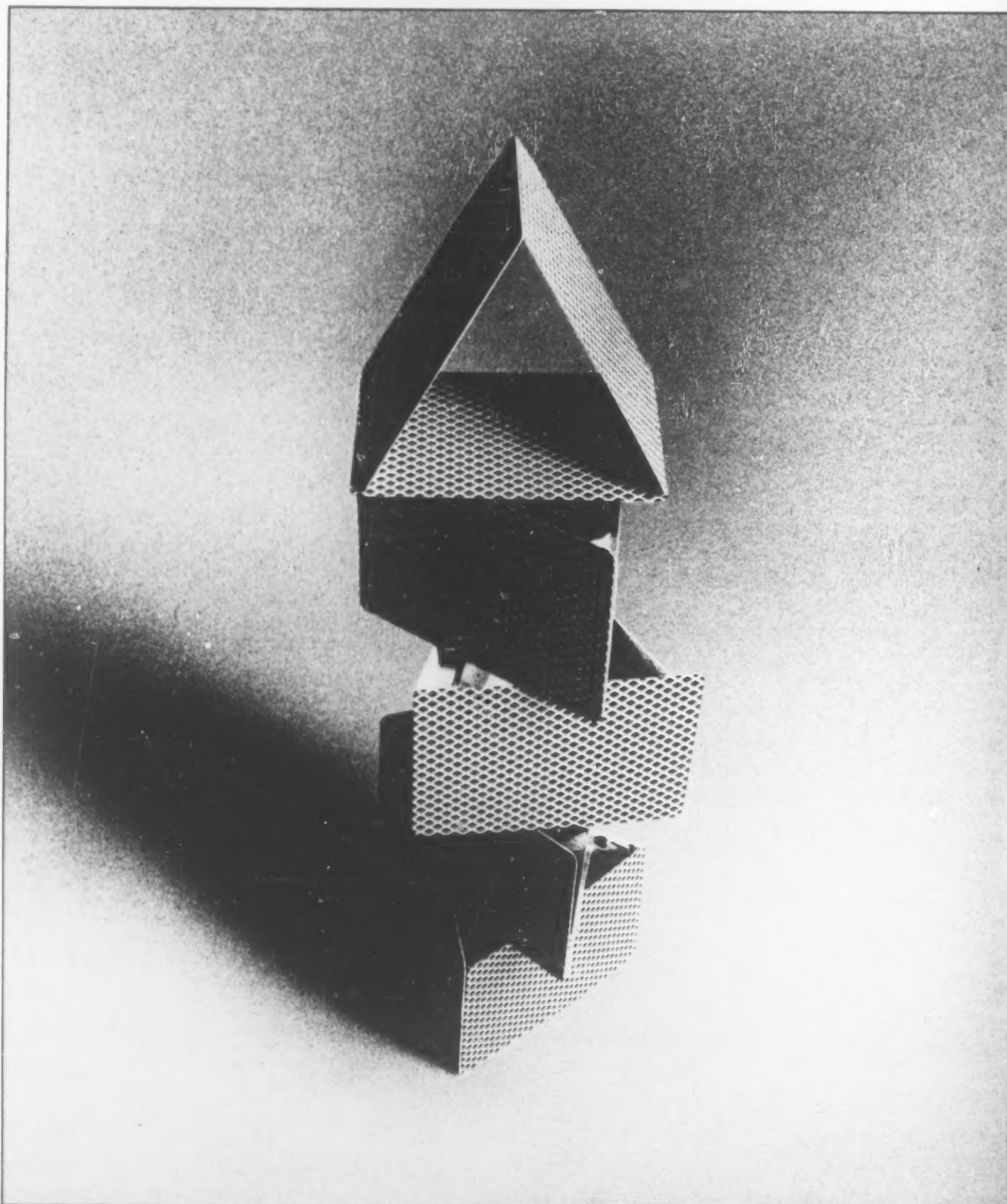
Venture capital managers: Abacus; Advanced Technology; Bridge Capital; Charles River; Crossroads; HLM Partners; Jafco Japan-U.S. Venture; Morgan Holland; Narragansett; Sprout; TCW; Venture Lending; Venturtech II.

Cash: Payden & Rygel; Aetna GIC.

Citibank is custodian and Frank Russell Co. is investment management consultant.

Key investment personnel are Beverly L. Hamilton, vice president pension investments; and Frances M. Crimbly, Edgar O. Cheney and Carl W. Strayer, directors-pension investments.

Money mover scorecard: Feb. 9.



Profiles

U S WEST Inc.

	(\$ millions)
Total assets	7,350
Defined benefit	6,350
Defined contribution	1,000
Employer contributions	150
Benefit payments	300

ENGLEWOOD, Colo. — U S WEST Inc. sharply increased its alternative investments in the year ended Sept. 30.

Its international investments rose more than tenfold. Its venture capital commitment leaped more than 300%. And with the hiring of Trust Co. of the West, it raised its commitment to oil and gas to about \$50 million, up from just \$1 million it had with Citibank as a result of the Bell system breakup.

In addition, its real estate equity investments rose 35% to \$290 million from \$215 million for the year ended Sept. 30. That increase excludes a more recent \$240 mil-

lion real estate development in Jersey City, N.J., in which U S WEST will provide \$100 million in equity, assume a \$60 million loan and seek \$80 million in additional loans for the rest of the financing. The latest development will boost U S WEST's real estate investments to a total of \$530 million, giving the fund a 146% increase since Sept. 30, 1985.

Also, U S WEST added nearly \$1 billion to a dedicated bond portfolio, nearly doubling its size to \$2.026 billion in the year ended Sept. 30.

In international, it hired Boston Co. to run a \$100 million international stock index fund. Also, it moved an international equity portfolio to Oechsle Advisors from Putnam International. As of Sept. 30, its international investments totaled \$570 million: \$500 million in equities and \$70 million in fixed income. That's up from \$53 million, all in equities, a year earlier.

U S West's venture capital commitments were at \$200 million as of Sept. 30, up from \$47 million in the prior year, although they haven't all been funded yet.

In other manager changes, it hired Payden & Rygel to run short-term cash and Moran Asset Management to run equities, while it released First Interstate and United Capital Management, respectively, fixed-income and equity managers.

In the year ended Sept. 30, U S WEST's employee benefit assets rose 29.5% to \$7.35 billion from \$5.675 billion. Its defined benefit assets grew 28% to \$6.35 billion from \$4.964 billion, while its combined defined contribution and profit-sharing assets increased 40.6% to \$1 billion from \$711 million. U S WEST officials attributed the increases in both funds to market performance.

Contributions dropped 26% to \$150 million in 1986 from \$204 million in 1985. In the same pe-

riod, its benefit payments rose 48.5% to \$300 million from \$202 million.

Among its other investments, U S WEST runs \$30 million of its pension assets in-house in venture capital. Also, it has \$1 billion in indexed stocks and uses stock-index futures.

The asset mix as of Sept. 30 was 50% domestic stocks, 33% domestic bonds, 1% cash equivalents, 5% real estate equity, 10% international and 1% venture capital.

Equity managers (domestic): Brignoli, Curley & Roberts; Capital Guardian; Concord; Denver Investment Advisors; First Manhattan; David J. Green; Mellon Capital; Moran; PRIMECAP; Sarofim; Trinity; Wells Fargo.

(International): Boston Co.; First Chicago; Oechsle.

Bond managers: Jennison; National Investment Services of America.

Real estate managers: Copley; Equitable; Jones Lang

Wootton; LaSalle; Security Capital; TCW.

Short-term investment manager: Payden & Rygel.

Oil and gas managers: Citibank; TCW.

Boston Safe Deposit & Trust is master trustee.

Key investment staff members are J.R. Belquist and M.B. Gorrrell, both managers-trust investments, and James J. Biundo, director-trust investments.

USX Corp.

	(\$ millions)
Total assets	9,400
Defined benefit	9,000
Thrift or savings	400
Employer contributions	0
Benefit payments	na

PITTSBURGH — The internal managers of the U.S. Steel and Carnegie Pension Fund assumed control of the \$600 million pension fund for employees of Marathon Oil Co., which was acquired by USX Corp. (formerly U.S. Steel Corp.) four years ago.

Marathon's managers, released when the internal team assumed control, were: The Boston Co. Institutional Investors; IDS Advisory Group; Jennison Associates; Lord Abbott & Co.; and The Vanguard Group.

Although the Marathon fund will remain a separate entity, its assets are included in the totals above.

USX's employee benefit assets grew 17.5% to \$9.4 billion as of Sept. 30 from \$8 billion a year earlier. Defined benefit assets increased 20% to \$9 billion from \$7.5 billion a year earlier while thrift or savings plan assets declined 20% to \$400 million from \$500 million.

The fund has \$135 million in international equities, \$20 million in oil and gas, \$60 million in mortgages and \$500 million in mortgage-backed securities. It uses stock options and stock index and fixed-income futures.

The asset mix as of Sept. 30 was 60% stocks, 30% bonds and 10% cash equivalents. Mortgages and mortgage-backed securities are included in bonds.

The fund's master custodians are Morgan Bank, U.S. Trust Co. and Chase Manhattan.

Gary A. Glynn is the president of the U.S. Steel and Carnegie Pension Fund; John G. Van Deu-

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Profiles

sen is senior vice president; and Peter C. Lincoln is vice president-investments.

Utah State Retirement Board

	(\$ millions)
Total assets	2,688
Defined benefit	2,688
Employer contributions	160
Benefit payments	60

SALT LAKE CITY — The Utah State Retirement Board increased the amount it has in indexed equities by 54% during the year ended Sept. 30. Indexed stocks totaled \$400 million, up from \$260 million the previous year.

Indexed stocks are managed internally by the board as a core portfolio.

The board also boosted its commitment to venture capital by \$5 million to a total of \$20 million.

Its equity real estate holdings were increased to \$187 million from \$139 million the previous year.

Total assets of the fund increased 24% to \$2,688 billion in the year ended Sept. 30, from \$2.16 billion.

Internally managed assets total \$1,969 billion, of which \$492 million is in equities, \$1,056 billion in fixed income, \$346 million in short-term investments and \$75 million in other investments.

The fund also has \$23 million in mortgages and \$109 million in mortgage-backed securities.

It uses stock options.

The asset mix of the fund as of Sept. 30 was 41% stocks, 35% bonds, 12% cash equivalents, 7% real estate equity, 1% mortgages and 4% mortgage-backed securities.

Equity advisers: Atalanta/Sosnoff; Capital Consultants; Smoot, Miller & Cheney; Value Line; Wasatch Advisors.

Real estate adviser: F.I.A. Associates.

Chemical Bank is the fund's custodian.

W. Dan Smith is the investment officer; Richard Cherry is assistant investment officer; and Bert D. Hunsaker is executive director.

Inc.; McKay-Shields Financial Corp.; Merganser Capital Management Corp.; and Security Capital Management.

Last July, the fund also added Rosenberg Institutional Equity Management as an equity manager, and, in an unconnected move, terminated an equity account run by Putnam Advisory Co. Inc.

The fund grew 40% during the 12 months ended Sept. 30 to \$6,296 billion from \$4,509 billion the same time in 1985. The growth, helped by a \$320 million positive cash flow, was primarily the result of a favorable investment experience, according to a fund official.

Employer contributions for 1986 remained unchanged from 1985 at \$650 million. Benefits paid out to retirees were down slightly, 7.1%, to \$325 million from \$350 in 1985.

The fund has \$1,408 billion in indexed stocks, an increase over the previous 12 months of 58%; \$276.7 million in real estate equity; \$33.2 million in mortgages; and \$200 million in mortgage-backed securities.

It uses stock index futures and fixed-income futures.

Despite all the manager changes, the total asset mix of the fund changed little over the 12-month period. On Sept. 30, the asset mix was 57.1% equities; 28.1% bonds; 6.7% cash equivalents; 4.4% real estate equity; 0.5% mortgages and 3.2% mortgage-backed securities.

Sovran Bank is the custodian. The fund uses Wilshire Associates and Rogers, Casey & Barksdale as investment consultants.

Equity managers: Batterymarch; Brignoli, Curley & Roberts; Concord; Corinthian; Delaware; GAMCO; Hellman, Jordan; Jundt/Capen; IDS Advisory; Lincoln Capital; McKenzie Walker; Mellon; Nicholas-Applegate; Pacific Financial; Rosenberg; Schafer Capital; Donald Smith & Co.; Wells Fargo Investment Advisors; TCW.

Fixed-income managers: Sanford C. Bernstein; Lehman; Massachusetts Financial Services; McKay-Shields; Merganser; Security Capital; Sovran Bank.

Real estate managers: Eastdil; Equitable; LaSalle; J.P. Mor-

gan; New England Life; Phoenix Mutual; Prudential; RREEF.

Key personnel are: Timothy R. Barron, director of investments; Gary Allen, director of internal asset management; and Tim Hassard, real estate officer.



Washington State Investment Board

	(\$ millions)
Total assets	8,100
Defined benefit	8,100
Employer contributions	370
Benefit payments	470

OLYMPIA, Wash. — As of Sept. 30, the Washington State Investment Board reported \$8.1 billion in defined benefit assets, an increase of 20% from the previous year.

Contributions to the plan for 1986 were \$370 million, benefit payments totaled \$470 million.

The board manages \$3,647 billion internally: \$660 million in equity; \$2.65 billion; and \$337 million in short-term instruments.

It has \$2.1 billion in indexed stocks and \$505 million in indexed bonds; \$190 million in venture capital; \$560 million in leveraged buy-outs; \$226 million in real estate equity; \$523 million in mortgages; and \$612 million in mortgage-backed securities.

The fund uses stock options, stock index futures, bond options and fixed-income futures.

The asset mix as of Sept. 30 was 45% stocks, 27% bonds, 4% cash equivalents, 3% real estate equity, 6% mortgages, 7% mortgage-backed securities and 8% venture capital and leveraged buy-outs.

During the year, the fund dropped Batterymarch Financial Management and Torray Clark & Co. as equity managers.

Equity managers: Columbia; Hotchkis & Wiley; Mellon Capital (passive); Schafer; Donald Smith; United; Wells Fargo (passive).

Real estate managers: Cooley; Equitable; Pacific Mutual; RREEF; Smith Barney.

Virginia Supplemental Retirement System

	(\$ millions)
Total assets	6,296
Defined benefit	6,296
Employer contributions	650
Benefit payments	325

RICHMOND, Va. — In 1986, executives of the Virginia Supplemental Retirement System continued an investment management overhaul operation begun in 1985. The fund farmed out a significant amount of its in-house assets, dropping the total managed internally to \$450 million in equity from \$1,822 billion in equity, fixed income and short-term assets.

The fund started out 1986 hiring four new real estate managers, which brought its roster of real estate managers to eight.

The new realty hirings are: Eastdil Realty Inc., J.P. Morgan Investments Management; New England Mutual Life Insurance Co.; and Phoenix Mutual Life Insurance Co. The fund also gave a fifth new account to existing manager, Equitable Real Estate Investment Management.

Early in the year, the fund hired Sovran Bank as a fixed-income manager. In November, another five fixed-income managers were hired: Sanford C. Bernstein & Co. Inc.; Lehman Management Co.

Funds with indexed bonds (\$ millions)

Fund	Assets
American Telephone & Telegraph Co.	3,671
GTE Corp.	1,199
NYNEX Corp.	1,068
Pennsylvania State Employees	633
Continental Can Co.	622
Mississippi PERS	620
Illinois Teachers	587
Washington Investment Board	505
Ameritech	500
Arizona State Retirement System	492
International Operating Engineers	459
New York City Retirement Systems	458
UMWA Health & Retirement Funds	450
Massachusetts PRIT	334
Illinois Universities	279
Deere & Co.	275
Exxon Corp.	233
Teamsters Central States	207
IAM National Pension Fund	167
Florida Power & Light Co.	155
Aluminum Co. of America	130
Minnesota Mining & Manufacturing Co.	125
Teamsters Western Conference	112
Presbyterian Church U.S.A.	110
Delaware State	101
Sun Co.	99
Tennessee Valley Authority	61
Iowa Public Employees	53
Owens-Illinois	44
National Intergroup Inc.	30
Hercules Inc.	28
Bakery & Confectionery Workers	5
Total	13,812

Funds with indexed stocks (\$ millions)

Fund	Assets
TIAA-CREF	15,000
New York State Common Fund	9,920
American Telephone & Telegraph Co.	7,986
California State Teachers	6,875
New York City Retirement Systems	6,738
New York State Teachers	5,977
California Public Employees	5,572
NYNEX Corp.	3,855
Maryland State Retirement	2,696
General Electric Co.	2,602
Teamsters Central States	2,452
Washington Investment Board	2,100
E.I. du Pont de Nemours & Co. Inc.	2,040
Ford Motor Co.	2,000
Minnesota State Board	1,994
Southwestern Bell Corp.	1,845
Exxon Corp.	1,703
Illinois Teachers	1,516
Virginia Retirement System	1,400
Florida Board of Administration	1,381
Pennsylvania State Employees	1,264
Pennsylvania School Employees	1,157
Deere & Co.	1,104
Bell Atlantic Corp.	1,100
Arizona State Retirement System	1,092
U S WEST Inc.	1,000
Illinois Universities	787
UAL Inc.	700
Sears Roebuck & Co.	618
GTE Corp.	577
Shell Oil Co.	566
World Bank	505
Aluminum Co. of America	500
Ameritech	500
Ohio School Employees	480
General Foods Corp.	475
Allied-Signal Inc.	440
Raytheon Co.	400
Utah State Retirement Board	400
United Methodist Church	382
Southern New England Telephone	366
Delaware State	357
International Operating Engineers	346
Illinois Municipal Retirement Fund	335
Honeywell Inc.	310
Cooper Industries Inc.	300
Nevada Public Employees	300
UMWA Health & Retirement Funds	300
Connecticut Trust Funds	291
United Technologies Corp.	291
Tenneco Inc.	252
Presbyterian Church U.S.A.	251
Kentucky Retirement Systems	250
Mississippi Public Employees	250
Massachusetts PRIT	249
Dow Chemical Co.	246
Chevron Corp.	240
Chrysler Corp.	240
Tennessee Valley Authority	240
Amoco Corp.	195
Florida Power & Light Co.	186
Hawaii State Employees	182
Teamsters Western Conference	180
Minnesota Mining & Manufacturing Co.	179
Texaco Inc.	163
Armco Inc.	162
Georgia State Retirement Systems	160
Ohio Police and Fire	154
National Rural Electric Co-op	149
Sun Co.	149
San Francisco Employees	146
Prudential Insurance Co.	144
Pacific Gas & Electric Co.	135
Alabama Retirement Systems	120
Eli Lilly and Co.	113
Standard Oil Co.	102
Massachusetts State Employees	100
IAM National Pension Fund	93
ITT Corp.	85
Goodyear Tire & Rubber Co.	79
Iowa Public Employees	79
Houston City, Fire and Police	70
Bechtel Power Corp.	69
Dart & Kraft Inc.	65
Trans World Airlines	64
S. Calif. Food/Commercial Workers	52
K mart Corp.	51
International Paper Co.	47
Southern California Edison	47
J.C. Penney Co. Inc.	41
National Intergroup Inc.	36
Owens-Illinois	36
Inland Steel Industries Inc.	31
Delta Air Lines Inc.	30
PPG Industries Inc.	30
Travelers Insurance Co.	30
Hercules Inc.	29
Detroit Retirement Systems	28
Motorola	20
Bakery & Confectionery Workers	5
Total	108,949

Profiles

The board's master custodian is Chase Manhattan; its investment management consultant is Frank Russell Co.

John A. Hitchman is executive director.

Westinghouse Electric Corp.

	(\$ millions)
Total assets	4,800
Defined benefit	3,800
Thrift or savings	1,000
Employer contributions	100
Benefit payments	365

PITTSBURGH — Thomas G. Scannell was appointed director-pension investments at Westinghouse Electric Corp., replacing T.A. Gudiness, who retired.

Total employee benefit assets increased 13% to \$4.8 billion as of Sept. 30, up from \$4.25 billion a year earlier.

During the year, the fund increased its equity and fixed-income exposures, taking money from cash equivalents. The fund's asset mix as of Sept. 30 was 28% stocks, 48% bonds, 6% cash, 14% real estate equity and 4% mortgage-backed securities.

Much of the fund is managed internally, by Westinghouse Pension Investments, but Mr. Scannell would not disclose the amount.

The fund uses stock options and stock index futures, and has \$1.25 billion invested in dedicated or immunized bond funds, \$560 million in real estate equity, \$125 million in mortgages and \$30 million in venture capital. Portfolio insurance is used to protect about \$140 million.

Equity managers: Brignoli, Curley & Roberts; Manufacturers Hanover; Pittsburgh National Bank, Provident Capital; Stralem.

Bonds: Equitable; MacKay-Shields; Pioneer; Putnam.

Real Estate: Citibank; Equitable; First Chicago; Mellon.

Mellon Bank is custodian; Wilshire Associates is the investment management consultant.

Mr. Scannell is the key investment officer.

State of Wisconsin Investment Board

	(\$ millions)
Total assets	13,500
Defined benefit	11,400
Defined contribution	2,100
Employer contributions	305
Benefit payments	360

MADISON, Wis. — The Wisconsin State Board of Investment re-entered the venture capital arena in June, committing \$11.5 million through three firms.

Bridge Capital Investors II received \$6 million; Davis Venture Partners, \$1.5 million; and Olympic Venture Partners II, \$4 million.

The fund also increased its commitment to Madison Capital Corp., which had been given \$400,000 initially and will receive up to \$5 million during the next few years.

The fund, which is internally managed and therefore lists no managers, is involved in seven other venture capital partnerships for a total commitment of \$60 million.

During the year, the fund also participated in Farm Credit investments — short-term securities with maturities of six months to five years. It invested "several hundred million" in the securities.

A study on the cost of divesting South Africa-related stocks was completed by SEI Funds Evaluation Service in February and the state Assembly and Senate later received legislation on a shareholder bill, which would have required the fund as a shareholder to encourage companies to get out of South Africa.

The bill passed the state Assembly but died weeks later in the Senate.

The total assets of the retirement system increased 25% to \$13.5 billion for the 12 months ended Sept. 30 from \$10.8 billion. Defined benefit assets increased 23.9% to \$11.4 billion from \$9.2 billion and defined contribution assets were up 31.3% to \$2.1 billion from \$1.6 billion.

The employer contribution was \$305 million, up 32.6% from \$230 million; benefits paid out during 1986 were \$360 million, up 30.9% from \$275 million.

In addition to its \$60 million venture capital commitment, the fund has \$50 million invested in

Canadian fixed income; \$200 million in leveraged buy-outs; \$350 million in real estate equity; \$150 million in mortgages and \$500 million in mortgage-backed securities.

The investment board uses fixed-income futures.

The asset mix as of Sept. 30 was 31% stocks, 51% bonds, 15% cash equivalents and 3% real estate equity. Mortgage-backed securities are included in bonds and venture capital, in equities.

Morgan Guaranty is custodian. Kenneth E. Codlin is executive director; Pat Lipton is executive assistant.

Annual PIPER listings: Feb. 23.

101-200

Abbott Laboratories

Abbott Park, Ill.

	(\$ millions)
Total assets	1,160
Defined benefit	590
Defined contribution	570
Employer contributions*	36
Benefit payments	na

In-house assets* 534

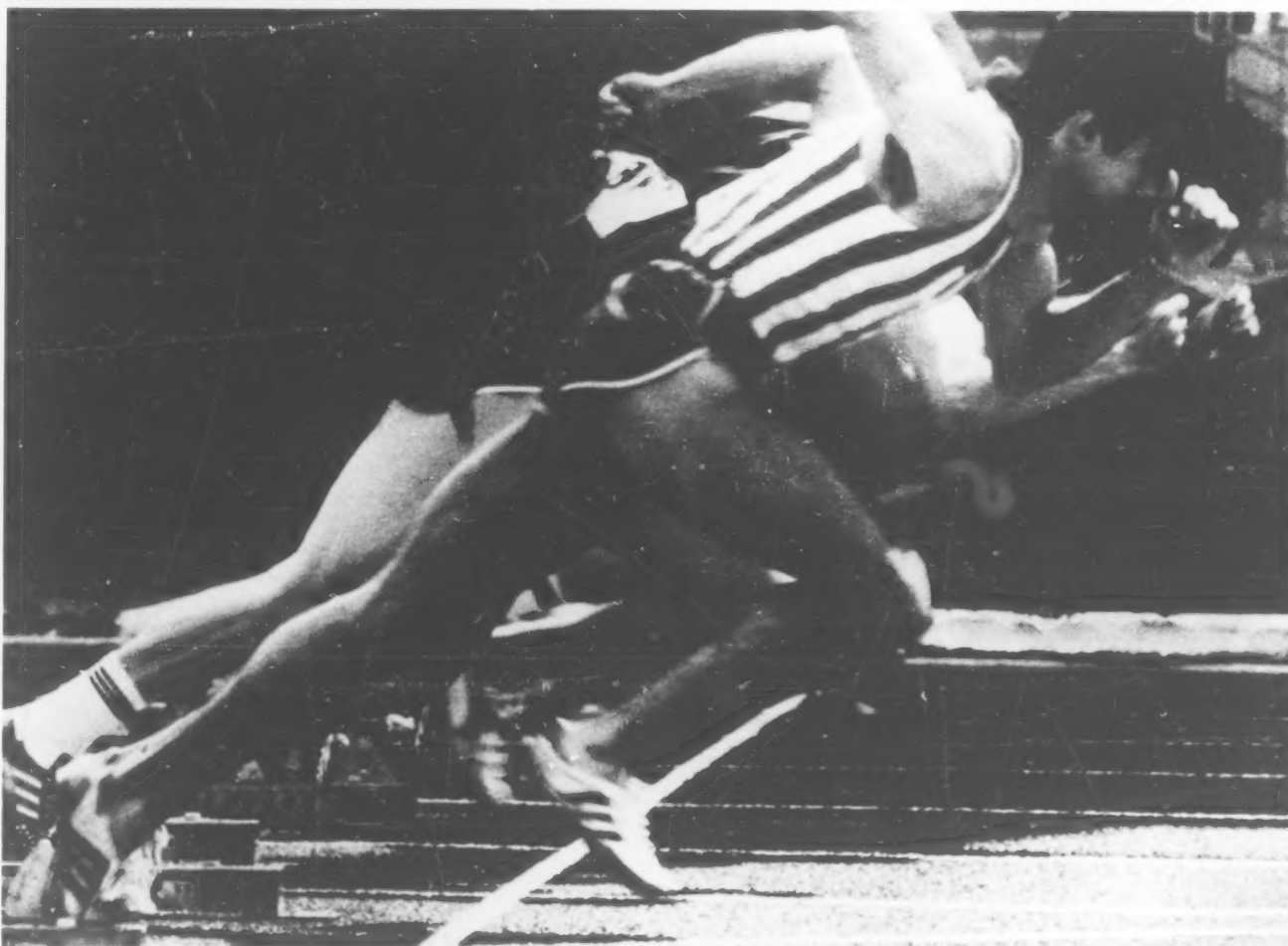
*Source: Money Market Directory

Aetna Life & Casualty Co.

Hartford, Conn.

	(\$ millions)
Total assets	1,936
Defined benefit	1,291
401(k)	624
IRAs	21
Employer contributions	31
Benefit payments	40
Portfolio insurance	600

In-house assets:	
Equities	626
Fixed income	351
Short term	30
Other	284
Passive investments:	



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**BA Investment Management
Corporation**

Profiles

GICs.....	351
Alternative investments:	
International equities.....	83
Real estate equity.....	79
Mortgages.....	18
Mortgage-backed securities.....	21
Hedging devices:	
Stock options.....	Y
Stock index futures.....	Y
Asset mix:	
Stocks.....	48.5%
Bonds.....	6.5%
Cash equivalents.....	2.3%
Real estate equity.....	6%
Mortgages.....	1.4%
Mortgage-backed securities.....	1.6%
GICs.....	27.2%
International.....	6.5%

American Stores Co.

Salt Lake City, Utah

	(\$ millions)
Total assets.....	1,254
Defined benefit.....	73
Defined contribution.....	1,155
Profit-sharing.....	10
PAYSO.....	16
Employer contributions.....	65
Benefit payments.....	12
Portfolio insurance.....	186

Alternative investments:	
International equities.....	49

Real estate equity.....	65
Hedging devices:	
Stock index futures.....	Y
Asset mix:	
Stocks.....	50.4%
Bonds.....	29.6%
Cash equivalents.....	14.5%
Real estate equity.....	5.5%

Arkansas Teacher Retirement System

Little Rock, Ark.

	(\$ millions)
Total assets.....	1,489
Defined benefit.....	1,489
Employer contributions.....	83
Benefit payments.....	63

In-house assets:	
Short term.....	155
Alternative investments:	
Mortgages.....	35
Mortgage-backed securities.....	46
Asset mix:	
Stocks.....	40.9%
Bonds.....	41.2%
Cash equivalents.....	11.8%
Mortgages.....	2.6%
Mortgage-backed securities.....	3.5%

The money mover scorecard will be published Feb. 9.

Armco Inc.

Cincinnati, Ohio

	(\$ millions)
Total assets.....	1,712
Defined benefit.....	1,545
Profit-sharing.....	7
Thrift or savings.....	132
401(k).....	24
ESOP.....	4
Employer contributions.....	88
Benefit payments.....	172

In-house assets:	
Fixed income.....	381
Short term.....	109
Passive investments:	
Indexed stocks.....	162
Dedicated immunized.....	381
GICs.....	34
Alternative investments:	
Other international.....	33
Venture capital.....	19
Real estate equity.....	98
Hedging devices:	
Stock index futures.....	Y
Asset mix:	
Stocks.....	47%
Bonds.....	30.7%
Cash equivalents.....	13.8%
Real estate equity.....	6.3%
GICs.....	2.2%

Ashland Oil Inc.

Ashland, Ky.

	(\$ millions)
Total assets*.....	1,100
Defined benefit.....	733
Profit-sharing.....	2
Thrift or savings.....	314
ESOP.....	51
Employer contributions.....	na
Benefit payments.....	na

*as of June 30, 1986

Passive investments:	
GICs.....	95
Alternative investments:	
Mortgage-backed securities.....	4
Hedging devices:	
Fixed-income futures.....	Y
Asset mix:	
Stocks.....	9%
Bonds.....	23%
Cash equivalents.....	55%
GICs.....	13%

Pensions & Investment Age's directory of investment advisers — an in-depth look at who manages the nation's wealth — will be published in the May 25 issue.

Bakery & Confectionery Union & Industry International Pension Fund

Kensington, Md.

	(\$ millions)
Total assets.....	1,600
Defined benefit.....	1,600
Employer contributions.....	150
Benefit payments.....	135

In-house assets:	
Equities.....	5
Fixed income.....	5
Passive investments:	
Indexed stocks.....	5
Indexed bonds.....	5
GICs.....	135
Alternative investments:	
International equities.....	16
International bonds.....	15
Other international.....	7
Mortgages.....	51
Hedging devices:	
Stock options.....	Y
Asset mix:	
Stocks.....	38.3%
Bonds.....	40.6%
Cash equivalents.....	5.3%
Mortgages.....	4.3%
GICs.....	8.1%
Other.....	3.4%

Sponsors with internal pension fund management (\$ millions)

Fund	Assets
TIAA-CREF.....	52,300
California Public Employees.....	36,200
New York State Common Fund.....	26,868
General Electric Co.....	18,801
New Jersey Division of Investment.....	16,673
New York State Teachers.....	16,056
Michigan State Employees.....	13,580
Ohio Public Employees.....	13,555
Texas Teachers.....	13,196
Ohio Teachers Retirement System.....	12,484
Wisconsin Investment Board.....	11,400
E.I. du Pont de Nemours & Co. Inc.....	9,979
North Carolina Retirement Systems.....	9,802
USX Corp.....	9,000
Georgia State Retirement Systems.....	8,382
University of California.....	7,687
Colorado Public Employees.....	5,321
Florida Board of Administration.....	5,203
IBM Corp.....	5,903
New York City Retirement Systems.....	5,882
Alabama Retirement Systems.....	5,454
Tennessee Consolidated Retirement.....	5,340
United Nations.....	5,304
Maryland State Retirement.....	4,089
Texas Employees Retirement System.....	3,659
Washington State Investment Board.....	3,647
Minnesota State Board.....	3,356
Bethlehem Steel Corp.....	2,992
Oregon Employees Retirement System.....	2,800
Procter & Gamble Co.....	2,761
Union Carbide Corp.....	2,590
Chicago Teachers.....	2,281
Sears Roebuck & Co.....	2,235
Metropolitan Life Insurance Co.....	2,150
Utah State Retirement Board.....	1,999
Massachusetts State Employees.....	1,800
Alaska State Retirement Systems.....	1,794
Commonwealth Edison Co.....	1,687
Deere & Co.....	1,623
Pennsylvania School Employees.....	1,600
Grumman Corp.....	1,575
Travelers Insurance Co.....	1,553
Exxon Corp.....	1,525
Ohio Police and Fire.....	1,440
Connecticut Trust Funds.....	1,397
GTE Corp.....	1,383
Indiana State Teachers.....	1,383
Ohio School Employees.....	1,374
Texas Municipal Retirement.....	1,350
Telecom.....	1,346
New Mexico Educational Retirement.....	1,341
Citicorp.....	1,292
Aetna Life & Casualty Co.....	1,291
Texas County & District.....	1,271
West Virginia State.....	1,230
Hughes Aircraft Co.....	1,200
Shell Oil Co.....	1,200
San Francisco Employees.....	1,188
Textron Inc.....	1,177
New York Life Insurance Co.....	1,143
Los Angeles County.....	1,101
American Airlines.....	1,100

Fund	Assets
Ford Motor Co.....	1,100
McDermott International Inc.....	1,094
Atlantic Richfield.....	1,068
General Dynamics Corp.....	1,056
Allied-Signal Inc.....	1,000
Amertech.....	1,000
CIGNA Corp.....	954
Chrysler Corp.....	739
Tenneco Inc.....	738
RJR Nabisco.....	736
Hawaii State Employees.....	719
GenCorp Inc.....	716
UAL Inc.....	700
Hewlett-Packard.....	680
Southern Baptist Convention.....	675
Kentucky Retirement Systems.....	616
National Rural Electric Co-op.....	615
LTV Corp.....	614
Dow Chemical Co.....	554
USWA Health & Retirement Funds.....	550
Armco Inc.....	490
FMC Corp.....	482
Amoco Corp.....	474
Virginia Retirement System.....	450
ITT Corp.....	426
Eastern Air Lines & Pilots.....	400
Trans World Airlines.....	399
Haliburon Savings Plan.....	356
United Methodist Church.....	310
Louisiana Teachers.....	300
Pacific Televis Group.....	290
Oklahoma Teachers.....	288
Martin Marietta Corp.....	236
Rhode Island State & City.....	229
Bechtel Power Corp.....	225
Kansas Public Employees.....	211
Louisiana State Employees.....	200
Delta Air Lines Inc.....	170
Kentucky Teachers Retirement.....	160
Detroit Retirement Systems.....	156
Arkansas Teacher Retirement System.....	155
S. Calif. Food/Commercial Workers.....	154
Owens-Illinois.....	150
Ill. Municipal Retirement Fund.....	130
Los Angeles City Employees.....	125
Philadelphia Municipal.....	118
Los Angeles Fire and Police.....	116
Los Angeles Dept. of Water & Power.....	115
Dart & Krell Inc.....	110
Arizona State Retirement System.....	100
Iowa Public Employees.....	99
Nevada Public Employees.....	93
Episcopal Church Pension Fund.....	84
Massachusetts PRIT.....	54
Teamsters Central States.....	36
U S WEST Inc.....	30
Presbyterian Church U.S.A.....	17
Boilermakers-Blacksmiths.....	12
Bakery & Confectionery Workers.....	10
Chicago Employees.....	10
Total.....	411,980

Baltimore Employees and Baltimore Police & Fire Employees Retirement Systems

Baltimore, Md.

	(\$ millions)
Total assets.....	1,146
Defined benefit.....	1,146
Employer contributions.....	36
Benefit payments.....	49

Passive investments:	
Dedicated immunized.....	60
GICs.....	72
Alternative investments:	
Mortgages.....	30
Hedging devices:	
Stock options.....	Y
Asset mix:	
Stocks.....	47%
Bonds.....	36%
Cash equivalents.....	8%
Mortgages.....	3%
GICs.....	6%

Bechtel Power Corp.

San Francisco, Calif.

	(\$ millions)
Total assets.....	1,400
Defined contribution.....	1,400
Employer contributions.....	na
Benefit payments.....	na
Portfolio insurance.....	250

In-house assets:	
Fixed income.....	150
Short term.....	75
Passive investments:	
Indexed stocks.....	69
GICs.....	25
Alternative investments:	
International equities.....	200
Real estate equity.....	64
Hedging devices:	
Stock options.....	Y
Bond options.....	Y
Stock index futures.....	Y
Fixed-income futures.....	Y
Asset mix:	
Stocks.....	59.2%
Bonds.....	25%
Cash equivalents.....	7.5%
Real estate equity.....	4.6%
GICs.....	2%
Other.....	1.7%

Boilermakers, Blacksmiths National Pension Trust

Kansas City, Kan.

	(\$ millions)
Total assets*.....	1,984
Defined benefit.....	1,984
Employer contributions.....	53
Benefit payments.....	76

*as of June 30, 1986

In-house assets:	
Short term.....	12
Passive investments:	

Profiles

Dedicated/immunized	98
GICs	152
Alternative investments:	
Real estate equity	195
Mortgages	3
Mortgage-backed securities	135
Asset mix:	
Stocks	46%
Bonds	22.9%
Cash equivalents	5%
Real estate equity	10%
Mortgages	0.1%
Mortgage-backed securities	7%
GICs	9%

Chicago Employees' Annuity & Benefit Fund

Chicago, Ill.

Total assets	(\$ millions)
Defined benefit	1,170
Employer contributions	80
Benefit payments	82

In-house assets:	
Short term	10
Passive investments:	
Dedicated/immunized	300
Alternative investments:	
International equities	50
Venture capital	60
Real estate equity	47
Mortgages	66
Mortgage-backed securities	93
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	34%
Bonds	34%
Cash equivalents	12%
Real estate equity	4%
Mortgages	7%
Mortgage-backed securities	7%
Other	2%

Public School Teachers' Pension and Retirement Fund of Chicago

Chicago, Ill.

Total assets	(\$ millions)
Defined benefit	2,281
Employer contributions	193
Benefit payments	110

In-house assets:	
Equities	1,117
Fixed income	1,017
Short term	147
Asset mix:	
Stocks	48.9%
Bonds	44.7%
Cash equivalents	6.4%

CIGNA Corp.

Philadelphia, Pa.

Total assets	(\$ millions)
Defined benefit	1,221
Profit-sharing	954
Thrift or savings	93
Employer contributions	174
Benefit payments	20
	35

In-house assets:	
Equities	512
Fixed income	378
Other	64
Alternative investments:	
International equities	32
Real estate equity	64
Asset mix:	
Stocks	54%
Bonds	19%
Real estate equity	7%
Annuities	20%

Citicorp

New York City

Total assets*	(\$ millions)
Defined benefit	1,701
Defined contribution	1,292
Employer contributions	409
Benefit payments	na
	na

*P&I Age estimate

Commonwealth Edison Co.

Chicago, Ill.

Total assets	(\$ millions)
Defined benefit	1,687
	1,687

Employer contributions	na
Benefit payments	na

In-house assets:	
Equities	859
Fixed income	660
Short term	168
Alternative investments:	
International equities	89
International bonds	27
Mortgage-backed securities	17
Hedging devices:	
Stock index futures	Y
Asset mix:	
Stocks	51%
Bonds	38%
Cash equivalents	10%
Mortgage-backed securities	1%

Conoco Inc.

Wilmington, Del.

Total assets	(\$ millions)
Defined benefit plan	1,987
Trifit/savings/401(k)	561
ESOP	1,283
Employer contributions	143
	33

Benefit payments	50
Portfolio insurance	130

Passive investments:	
GICs	30
Alternative investments:	
International equities	37
International bonds	8
Venture capital	27
Real estate equity	32
Mortgage-backed securities	18
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	67%
Bonds	13%
Cash equivalents	1%
Real estate equity	6%
Mortgage-backed securities	3%
GICs	5%
Venture capital	5%

The annual returns of PIPER participants will be published in the Feb. 23 issue.

Consolidated Edison of New York

New York, N.Y.

Total assets	(\$ millions)
Defined benefit	2,297
Thrift or savings	2,143
401(k)	59
Employer contributions	95
Benefit payments	na
	na

*Source: Money Market Directory

Continental Can Co. Inc.

Norwalk, Conn.

Total assets	(\$ millions)
Defined benefit	1,104
401(k)	934
Employer contributions	170
Benefit payments	20
	72

Passive investments:	
Indexed bonds	622
Alternative investments:	
Venture capital	3
Real estate equity	62
Asset mix:	

Bonds	90%
Cash equivalents	3%
Real estate equity	7%

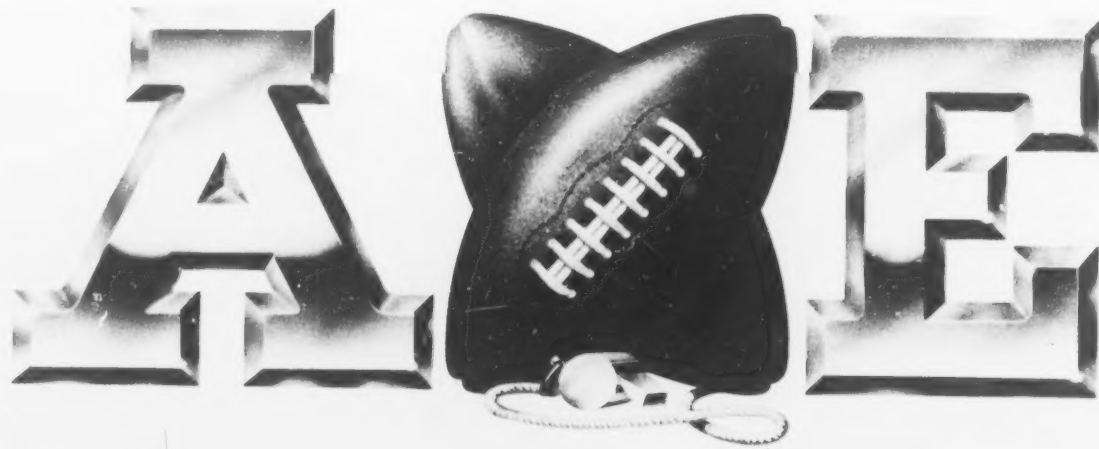
Cooper Industries Inc.

Houston, Texas

Total assets	(\$ millions)
Defined benefit	1,150
Defined contribution	750
Profit-sharing	50
401(k)	150
Employer contributions	200
Benefit payments	na
	na

Passive investments:	
Indexed stocks	300
Asset mix:	
Stocks	40%
Cash equivalents	60%

A special section on leasing will be published in the June 15 edition of *Pensions & Investment Age*.



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Profiles

Dart & Kraft Inc.

Northbrook, Ill.	
(\$ millions)	
Total assets	1,877
Defined benefit	1,296
Defined contribution	581
Employer contributions	35
Benefit payments	75

In-house assets:	
Equities	60
Short-term	50
Passive investments:	
Indexed stocks	65
GICs	344
Alternative investments:	
International equities	115
Venture capital	15
Mortgage-backed securities	40
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	66%
Bonds	10%
Cash equivalents	5%
GICs	19%

Deere & Co.

Moline, Ill.	
(\$ millions)	
Total assets	2,307
Defined benefit	2,238
401(k)	68
ESOP	1
Employer contributions	100
Benefit payments	150
Portfolio insurance	2,238

In-house assets:	
Equities	1,281
Fixed income	275
Other	67
Passive investments:	
Indexed stocks	1,104
Indexed bonds	275
Alternative investments:	
International equities	47
Venture capital	14
Real estate equity	21
Mortgage-backed securities	45
Hedging devices:	
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	76%
Bonds	19%
Cash equivalents	2%
Real estate equity	1%
Mortgage-backed securities	2%

State of Delaware Retirement Funds

Dover, Del.	
(\$ millions)	
Total assets	1,200
Defined benefit	1,200
Employer contributions	81
Benefit payments	47

Passive investments:	
Indexed stocks	357
Indexed bonds	101
Alternative investments:	
International equities	45
Venture capital	25
Real estate equity	125
Hedging devices:	
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	56.1%
Bonds	14.5%
Cash equivalents	6.4%
Real estate equity	10.7%
Other	12.3%

Dow Chemical Co.

Midland, Mich.	
(\$ millions)	
Total assets	2,080
Defined benefit	1,770
401(k)	310
Employer contributions	118
Benefit payments	190

In-house assets:	
Equities	306
Fixed income	151
Short term	18
Other	79
Passive investments:	
Indexed stocks	246
Dedicated/immunized	113
GICs	54
Alternative investments:	

International equities	130
Venture capital	23
Real estate equity	56
Hedging devices:	
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	69%
Bonds	23%
Cash equivalents	1%
Real estate equity	3%
GICs	3%
Venture capital	1%

Eastern Airlines Inc.

Miami, Fla.	
(\$ millions)	
Total assets	2,074
Defined benefit*	1,200
Defined contribution	874
Employer contributions	34
Benefit payments	50

*Except for defined benefit plan assets, all data is for the Eastern Air Lines Variable Benefit Retirement Plan for Pilots, Boston.

In-house assets	400
Alternative investments:	
Other international	20
Oil and gas	10
LBOs	5
Real estate equity	200
Asset mix:	
Stocks	50%
Bonds	30%
Real estate equity	20%

Episcopal Church Pension Fund

New York, N.Y.	
(\$ millions)	
Total assets	1,250
Defined benefit	1,200
Thrift or savings	20
401(k)	30
Employer contributions	42
Benefit payments	33
Portfolio insurance	700

In-house assets:	
Fixed income	45
Short term	25
Other	10
Alternative investments:	
International equities	70
Oil and gas	40
Real estate equity	10
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	60%
Bonds	35%
Cash equivalents	3%
Real estate equity	2%

Florida Power & Light Co.

Miami, Fla.	
(\$ millions)	
Total assets	1,509
Defined benefit	1,047
Defined contribution	174
Thrift or savings	288
Employer contributions	51
Benefit payments	14

Passive investments:	
Indexed stocks	186
Indexed bonds	155
Alternative investments:	
International equities	106
Real estate equity	29
Asset mix:	
Stocks	68.9%
Bonds	23.3%
Cash equivalents	4.8%
Real estate equity	3%

FMC Corp.

Chicago, Ill.	
(\$ millions)	
Total assets	1,644
Defined benefit	1,321
401(k)	323
Employer contributions	45
Benefit payments	45

In-house assets:	
Equities	16
Short term	34
Other	432
Passive investments:	
Dedicated/immunized	432
GICs	62

Alternative investments:	
International equities	75
Venture capital	40
Hedging devices:	
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	57%
Bonds	35.3%
GICs	4.7%
Venture capital	3%

GenCorp Inc.

Akron, Ohio	
(\$ millions)	
Total assets	1,525
Defined benefit	783
Thrift or savings	288
ESOP	23
Other	431
Contributions	na
Benefit payments	70

In-house assets	716
-----------------	-----

The Goodyear Tire & Rubber Co.

Akron, Ohio	
(\$ millions)	
Total assets	1,658
Defined benefit	1,487
401(k)	131
ESOP	40
Employer contributions	37
Benefit payments	134

Passive investments:	
Indexed stocks	79
Alternative investments:	
International bonds	10
Real estate equity	78
Mortgages	41
Hedging devices:	
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	41.9%
Bonds	18.8%
Cash equivalents	24.5%
Real estate equity	5.3%
Mortgages	2.7%
Annuities	6.8%

Grumman Corp.

Bethpage, N.Y.	
(\$ millions)	
Total assets	2,400
Defined benefit	1,684
Thrift or savings*	716
Employer contributions	60
Benefit payments	50

*savings assets as of Dec. 31, 1985

In-house assets:	
Equities	625
Fixed income	635
Short term	315
Alternative investments:	
Venture capital	19
LBOs	10
Real estate equity	80
Asset mix:	
Stocks	37%
Bonds	38%
Cash equivalents	19%
Real estate equity	5%
Other	1%

Halliburton Co.

Duncan, Okla.	
(\$ millions)	
Total assets	1,130
Profit-sharing	774
Thrift/savings/401(k)	356
Employer contributions	0
Benefit payments	140

In-house assets:	
Fixed income	356
Passive investments:	
GICs	356
Alternative investments:	
International equities	47
Real estate equity	8
Mortgages	13
Mortgage-backed securities	15
Hedging devices:	
Bond options	Y
Fixed-income futures	Y
Asset mix:	
Stocks	27%
Bonds	29%
Cash equivalents	4%
Real estate equity	1%
Mortgages	1%
GICs	31%
Other	7%

Hercules Inc.

Wilmington, Del.	
(\$ millions)	
Total assets	1,367
Defined benefit	1,174
401(k)	193
Employer contributions	11
Benefit payments	74

Passive investments:	
Indexed stocks	29
Indexed bonds	28
Dedicated/immunized	253
GICs	119
Alternative investments:	
International equities	148
Real estate equity	107
Asset mix:	
Stocks	52.3%
Bonds	23.8%
Cash equivalents	4.7%
Real estate equity	9.1%
GICs	10.1%

Hewlett-Packard Co.

Palo Alto, Calif.	
(\$ millions)	
Total assets*	1,150
Defined benefit	215
Profit-sharing	798
Other	137
Employer contributions	na
Benefit payments	na

*Source: Money Market Directory

In-house assets	690
Passive investments:	
Indexed stocks	35
Alternative investments:	
International equities	23
Venture capital	92
Mortgages	12
Asset mix:	
Stocks	62%
Bonds	22%
Cash equivalents	4%
Mortgages	1%
GICs	3%
Venture capital	8%

Honeywell Inc.

Minneapolis, Minn.	
(\$ millions)	
Total assets	2,163
Defined benefit	1,708
Thrift or savings	34
401(k)	421
Employer contributions	67
Benefit payments	84
Portfolio insurance	250

Passive investments:	
Indexed stocks	310
Dedicated/immunized	308
GICs	331
Alternative investments:	
International equities	133
International bonds	51
Venture capital	6
Oil and gas	14
Real estate equity	107
Hedging devices:	
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	41.9%
Bonds	29.5%
Cash equivalents	8.4%
Real estate equity	4.9%
GICs	15.3%

National Pension Fund for Hospital and Health Care Employees

New York, N.Y.	
(\$ millions)	
Total assets*	1,600
Defined benefit	1,600
Employer contributions	100
Benefit payments	25

*as of June 30, 1986

Alternative investments:	
Real estate equity	69
Asset mix:	
Stocks	31.3%
Bonds	48.9%
Cash equivalents	14.2%
Real estate equity	4.4%
Other	1.2%

The directory of master trust banks will be published in the Sept. 7 issue of *Pensions & Investment Age*.

City of Houston Retirement System

Houston, Texas	
(\$ millions)	
Total assets	1,203
Defined benefit	1,203
Employer contributions	61
Benefit payments	37

Passive investments:	
Indexed stocks	70
Alternative investments:	
International equities	40
Venture capital	9
Real estate equity	55
Mortgages	2
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	57%
Bonds	22%
Cash equivalents	15%
Real estate equity	5%
Mortgages	1%

IAM National Pension Fund

Washington, D.C.	
(\$ millions)	
Total assets	1,198
Defined benefit	1,198
Employer contributions	68
Benefit payments	69

Passive investments:	
Indexed stocks	93
Indexed bonds	167
Alternative investments:	
Real estate equity	44
Asset mix:	
Stocks	46.2%
Bonds	36.4%
Cash equivalents	3.3%
Real estate equity	3.7%
Other	10.4%

Public Employee Retirement System of Idaho

Boise, Idaho	
(\$ millions)	
Total assets	1,100
Defined benefit	1,100
Employer contributions	68
Benefit payments	66

Passive investments:	
GICs	4
Alternative investments:	
Real estate equity	68
Mortgages	71
Mortgage-backed securities	132
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	45.6%
Bonds	24.6%
Cash equivalents	9.5%
Real estate equity	8.2%
Mortgages	6.7%
Mortgage-backed securities	1.2%
GICs	0.4%
Other	3.8%

Illinois State Board of Investment

Chicago, Ill.	
(\$ millions)	
Total assets	2,280
Defined benefit	2,280
Employer contributions	na
Benefit payments	na

In-house assets:	
Equities	435
Fixed income	936
Short term	35
Alternative investments:	
Venture capital	16
LBOs	50
Real estate equity	160
Mortgage-backed securities	90
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	45%
Bonds	41%
Cash equivalents	3%
Real estate equity	7%
Mortgage-backed securities	4%

The cash management survey will be published Nov. 2.

Profiles

Indiana Public Employees' Retirement Fund

Indianapolis, Ind.	
(\$ millions)	
Total assets	2,020
Defined benefit	1,575
Defined contribution	445
Employer contributions	180
Benefit payments	90

Alternative investments:	
Mortgage-backed securities	140
Asset mix:	
Bonds	84%
Cash equivalents	9%
Mortgage-backed securities	7%

Indiana State Teachers' Retirement Fund

Indianapolis, Ind.	
(\$ millions)	
Total assets	1,260
Defined contribution	1,260
Employer contributions	170
Benefit payments	170

Passive investments:	
GICs	15
Alternative investments:	
Mortgage-backed securities	400
Asset mix:	
Bonds	69%
Mortgage-backed securities	30%
GICs	1%

Inland Steel Industries Inc.

Chicago, Ill.	
(\$ millions)	
Total assets	1,652
Defined benefit	1,383
Thrift/savings/401(k)	269
Employer contributions	11
Benefit payments	97

Passive investments:	
Indexed stocks	31
Dedicated immunized	459
GICs	109
Alternative investments:	
International equities	90
Venture capital	5
Real estate equity	99
Mortgage-backed securities	105
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	51%
Bonds	25%
Cash equivalents	2%
Real estate equity	6%
Mortgage-backed securities	8%
GICs	8%

International Paper Co.

New York, N.Y.	
(\$ millions)	
Total assets	1,567
Defined benefit	1,303
Defined contribution	38
Thrift, savings, 401(k)	226
Employer contributions	na
Benefit payments	na
Portfolio insurance	250

Passive investments:	
Indexed stocks	47
GICs	50
Alternative investments:	
International equities	68
Real estate equity	105
Mortgages	3
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	64%
Bonds	21%
Cash equivalents	3%
Real estate equity	8%
GICs	4%

Kentucky Retirement Systems

Frankfort, Ky.	
(\$ millions)	
Total assets	2,108
Defined benefit	2,108
Employer contributions	119
Benefit payments	66

In-house assets:	
Equities	250
Short term	366
Passive investments:	
Indexed stocks	250
Alternative investments:	
Real estate equity	81
Mortgage-backed securities	364
Asset mix:	
Stocks	35%
Bonds	27%
Cash equivalents	17%
Real estate equity	4%
Mortgage-backed securities	17%

Kentucky Teachers' Retirement System

Frankfort, Ky.	
(\$ millions)	
Total assets	2,323
Defined benefit	2,323
Employer contributions	145
Benefit payments	150
In-house assets:	
Fixed income	160
Alternative investments:	

Real estate equity	35
Mortgages	130
Mortgage-backed securities	105
Asset mix:	
Stocks	24%
Bonds	55%
Cash equivalents	11%
Real estate equity	1%
Mortgages	5%
Mortgage-backed securities	4%

K mart Corp.

Troy, Mich.	
(\$ millions)	
Total assets	1,399
Defined benefit	799
Thrift/savings/401(k)	600
Employer contributions	33
Benefit payments	22
Passive investments:	
Indexed stocks	51
GICs	210
Alternative investments:	
Real estate equity	63
Hedging devices:	
Stock options	Y
Stock index futures	Y

Asset mix:	
Stocks	59%
Cash equivalents	4%
Real estate equity	8%
GICs	26%
Annuities	3%

Eli Lilly and Co.

Indianapolis, Ind.	
(\$ millions)	
Total assets	1,425
Defined benefit	875
401(k)	550
Employer contributions	62
Benefit payments	36

Passive investments:	
Indexed stocks	113
Dedicated immunized	92
Alternative investments:	
International equities	40
Venture capital	8
Real estate equity	38
Asset mix:	
Stocks	65%
Bonds	20%
Cash equivalents	11%
Real estate equity	4%

Los Angeles City Employees' Retirement System

Los Angeles, Calif.	
(\$ millions)	
Total assets	1,822
Defined benefit	1,822
Employer contributions	120
Benefit payments	127

In-house assets:	
Short term	125
Alternative investments:	
Mortgage-backed securities	87
Asset mix:	
Stocks	35%
Bonds	53.3%
Cash equivalents	7%
Mortgage-backed securities	4.7%

Los Angeles Fire & Police Pension System

Los Angeles, Calif.	
(\$ millions)	
Total assets	2,205

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Profiles

Defined benefit.....	2,205
Employer contributions.....	229
Benefit payments.....	209

In-house assets:	
Short term.....	116

Alternative investments:	
International equities.....	3
International bonds.....	61
Mortgage-backed securities.....	124

Hedging devices:	
Stock options.....	Y

Asset mix:	
Stocks.....	48%
Bonds.....	36%
Cash equivalents.....	11%
Mortgage-backed securities.....	5%

Los Angeles Department of Water & Power Employees' Retirement Plan

Los Angeles, Calif.

(\$ millions)

Total assets.....	1,500
Defined benefit.....	1,500
Employer contributions.....	90
Benefit payments.....	89

In-house assets:	
Short term.....	115

Alternative investments:	
Mortgage-backed securities.....	85

Hedging devices:	
Stock options.....	Y

Asset mix:	
Stocks.....	35%
Bonds.....	54%
Cash equivalents.....	5%
Mortgage-backed securities.....	6%

Louisiana State Employees Retirement System

Baton Rouge, La.

(\$ millions)

Total assets*.....	1,806
Defined benefit.....	1,806
Employer contributions.....	118
Benefit payments.....	175

*as of June 30, 1986

In-house assets:	
Fixed income.....	200

Alternative investments:	
International equities.....	5
Mortgages.....	16
Mortgage-backed securities.....	127

Asset mix:	
Stocks.....	21%
Bonds.....	61%
Cash equivalents.....	10%
Mortgages.....	1%
Mortgage-backed securities.....	7%

The LTV Corp.

Dallas, Texas

(\$ millions)

Total assets.....	2,354
Defined benefit.....	2,052
Defined contribution.....	302
Employer contributions.....	na
Benefit payments.....	na

In-house assets.....	614
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Alternative investments:	
Venture capital.....	41
Real estate equity.....	164

Asset mix:	
Stocks.....	55%
Bonds.....	30%
Cash equivalents.....	5%
Real estate equity.....	8%
Other.....	2%

Martin Marietta Corp.

Bethesda, Md.

(\$ millions)

Total assets.....	2,123
Defined benefit.....	1,565
Profit-sharing.....	558
Employer contributions.....	91
Benefit payments.....	48

In-house assets:	
Equities.....	96
Fixed income.....	140

Passive investments:	
GICs.....	98

Asset mix:	
Stocks.....	55.3%
Bonds.....	23.1%
Cash equivalents.....	10.6%
GICs.....	6.3%
IPGs.....	4.7%

Pension Reserves Investment Trust Fund (of Massachusetts)

Boston, Mass.

(\$ millions)

Total assets.....	1,646
Employer contributions.....	350
Benefit payments.....	21

In-house assets:	
Short-term.....	54

Passive investments:	
Indexed stocks.....	249
Indexed bonds.....	334

Alternative investments:	
International equities.....	165
Venture capital.....	24
LBOs.....	60
Real estate equity.....	54
Mortgage-backed securities.....	47

Asset mix:	
Stocks.....	48%
Bonds.....	38%
Cash equivalents.....	8%
Real estate equity.....	3%
Mortgage-backed securities.....	3%

McDermott International Inc.

New Orleans, La.

(\$ millions)

Total assets.....	1,496
Defined benefit.....	1,241
Defined contribution.....	250
Profit-sharing.....	5

Employer contributions.....	10
Benefit payments.....	56

In-house assets:	
Equities.....	38
Fixed income.....	1,056

Passive investments:	
Dedicated immunized.....	365

Asset mix:	
Stocks.....	15%
Bonds.....	85%

Employees' Retirement System — City of Milwaukee

Milwaukee, Wis.

(\$ millions)

Total assets.....	1,187
Defined benefit.....	1,187
Employer contributions.....	50
Benefit payments.....	50

Passive investments:	
Dedicated immunized.....	200

Alternative investments:	
Real estate equity.....	20
Mortgage-backed securities.....	100

Hedging devices:	
Stock options.....	Y

Asset mix:	
Stocks.....	36%
Bonds.....	47%
Cash equivalents.....	9%
Mortgage-backed securities.....	8%

Minnesota Mining & Manufacturing Co.

St. Paul, Minn.

(\$ millions)

Total assets.....	2,221
Defined benefit.....	1,924
Thrift or savings.....	35
401(k).....	225
IRA.....	37

Employer contributions.....	0
Benefit payments.....	55

Passive investments:	
Indexed stocks.....	179
Indexed bonds.....	125

Alternative investments:	
International equities.....	145
Venture capital.....	10
LBOs.....	33
Real estate equity.....	92
Mortgages.....	30
Mortgage-backed securities.....	95

Hedging devices:	
Stock index futures.....	Y
Fixed-income futures.....	Y

Asset mix:	
Stocks.....	62%
Bonds.....	23%
Cash equivalents.....	1%
Real estate equity.....	5%
Mortgages.....	2%
Mortgage-backed securities.....	5%
Other.....	2%

Fund's investing overseas (\$ millions)

Fund	Total	Equities	Fixed	Other
TIAA-CREF	3,500	3,400	100	0
United Nations	2,755	1,490	1,100	175
E.I. du Pont de Nemours & Co. Inc.	1,172	484	888	0
GTE Corp.	1,131	1,034	97	0
General Electric Co.	1,085	833	261	1
American Telephone & Telegraph Co.	1,020	1,020	0	0
Ameritech	950	450	500	0
United Technologies Corp.	708	576	132	0
Ford Motor Co.	700	500	200	0
World Bank	600	488	134	0
U S WEST Inc.	570	500	70	0
Atlantic Richfield	521	478	43	0
Prudential Insurance Co.	458	349	109	0
Oregon Employee Retirement System	445	445	0	0
Allied-Signal Inc.	380	330	50	0
Illinois Teachers	343	277	66	0
Monsanto	341	311	30	0
Exxon Corp.	321	321	0	0
Amoco Corp.	316	316	0	0
Hawaii State Employees	281	281	0	0
Boeing Co.	275	0	0	275
Owens-Illinois	255	208	47	0
Sears Roebuck & Co.	250	250	0	0
Sun Co.	231	231	0	0
San Francisco Employees	206	104	102	0
Bechtel Power Corp.	200	200	0	0
Caterpillar Inc.	190	190	0	0
Honeywell Inc.	184	133	51	0
Alaska State Retirement Systems	181	181	0	0
National Rural Electric Co-op	179	179	0	0
Tennessee Consolidated Retirement	176	94	82	0
Southwestern Bell Corp.	169	169	0	0
Massachusetts PRIT	165	165	0	0
Xerox Corp.	152	139	12	1
Illinois Municipal Retirement Fund	150	116	0	34
Hercules Inc.	148	148	0	0
Minnesota Mining & Manufacturing Co.	145	145	0	0
Illinois Universities	144	144	0	0
TRW Inc.	140	140	0	0
USX Corp.	135	135	0	0
Dow Chemical Co.	130	130	0	0
Presbyterian Church U.S.A.	127	117	10	0
ITT Corp.	123	123	0	0
Aluminum Co. of America	120	80	40	0
Delta Air Lines Inc.	120	120	0	0
Hughes Aircraft Co.	120	120	0	0
Commonwealth Edison Co.	116	89	27	0
Dart & Kraft Inc.	115	115	0	0
American Airlines	110	70	30	10
Florida Power & Light Co.	106	106	0	0
Southern New England Telephone	103	96	7	0
Philip Morris Inc.	93	93	0	0
Florida Board of Administration	90	0	90	0
Inland Steel Industries Inc.	90	90	0	0
Aetna Life & Casualty Co.	83	83	0	0
Travelers Insurance Co.	82	82	0	0
J.C. Penney Co. Inc.	80	80	0	0
FMC Corp.	75	75	0	0
Massachusetts State Employees	75	25	50	0
Pacific Gas & Electric Co.	73	73	0	0
Episcopal Church Pension Fund	70	70	0	0
International Paper Co.	68	68	0	0
Los Angeles Fire and Police	64	3	61	0
Chicago Employees	50	50	0	0
Standard Oil Co.	50	50	0	0
Wisconsin Investment Board	50	0	50	0
American Stores Co.	49	49	0	0
PPG Industries Inc.	48	48	0	0
Deere & Co.	47	47	0	0
Halliburton Savings Plan	47	47	0	0
Unocal Corp.	47	47	0	0
Conoco Inc.	45	37	8	0
Delaware State	45	45	0	0
Trans World Airlines	44	44	0	0
Ell Lilly and Co.	40	40	0	0
Houston City, Fire and Police	40	40	0	0
Bakery & Confectionery Workers	38	16	15	7
Pen American World Airways Inc.	35	35	0	0
Amco Inc.	33	0	0	33
CIGNA Corp.	32	32	0	0
New York City Retirement Systems	32	32	0	0
Motorola	30	30	0	0
Southern California Edison	28	28	0	0
Hewlett-Packard	23	23	0	0
Eastern Air Lines & Pilots	20	0	0	20
RJR Nabisco	20	20	0	0
Navistar International Corp.	15	0	15	0
General Foods Corp.	14	14	0	0
Goodyear Tire & Rubber Co.	10	0	10	0
University of California	6	6	0	0
Louisiana State Employees	5	5	0	0
Shell Oil Co.	4	0	4	0
Detroit Retirement Systems	3	0	3	0
Totals	24,465	18,615	4,284	596

Profiles

Motorola Inc.

Schaumburg, Ill.

	(\$ millions)
Total assets	1,325
Defined benefit	400
Profit-sharing	925
Employer contributions	0
Benefit payments	20

Passive investments:	
Indexed stocks	20
Alternative investments:	
International equities	30
Mortgage-backed securities	25
Asset mix:	
Stocks	70%
Bonds	20%
Mortgage-backed securities	10%

National Intergroup Inc.

Pittsburgh, Pa.

	(\$ millions)
Total assets*	1,150
Defined benefit	1,100
401(k)	50
Employer contributions	58
Benefit payments	82

*as of Aug. 31, 1986

Passive investments:	
Indexed stocks	36
Indexed bonds	30
Dedicated immunized	276
GICs	12
Alternative investments:	
Venture capital	14
Real estate equity	56
Mortgage-backed securities	14
Asset mix:	
Stocks	24%
Bonds	44%
Cash equivalents	25%
Real estate equity	5%
Mortgage-backed securities	1%
GICs	1%

National Rural Electric Cooperative Association

Washington, D.C.

	(\$ millions)
Total assets	1,550
Defined benefit	1,300
Thrift or savings	250
Employer contributions	130
Benefit payments	175

In-house assets:	
Equities	100
Fixed income	500
Short term	15
Passive investments:	
Indexed stocks	149
GICs	147
Alternative investments:	
International equities	179
LBOs	5
Mortgage-backed securities	20
Asset mix:	
Stocks	48%
Bonds	29%
Cash equivalents	20%
Mortgage-backed securities	2%
GICs	1%

Navistar International Corp.

Chicago, Ill.

	(\$ millions)
Total assets	1,655
Defined benefit	1,650
Thrift or savings	5
Employer contributions	375
Benefit payments	230

Passive investments:	
Dedicated/immunized	1,425
GICs	30
Alternative investments:	
International bonds	15
Real estate equity	60
Mortgages	210
Mortgage-backed securities	22
Hedging devices:	
Bond options	Y
Fixed-income futures	Y
Asset mix:	
Stocks	1%
Bonds	67%
Cash equivalents	12%
Real estate equity	4%
Mortgages	13%
Mortgage-backed securities	1%
GICs	2%

Public Employees Retirement System of Nevada

Carson City, Nev.

	(\$ millions)
Total assets	2,048
Defined benefit	2,048
Employer contributions	159
Benefit payments	82

In-house assets:	
Other	93
Passive investments:	
Indexed stocks	300
Dedicated immunized	106
Alternative investments:	
Venture capital	14
Real estate equity	72
Mortgages	200
Mortgage-backed securities	297
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	49.3%
Bonds	21.2%
Cash equivalents	0.1%

Real estate equity	3.7%
Mortgages	10.3%
Mortgage-backed securities	15.4%

New Mexico Educational Retirement Board

Santa Fe, N.M.

	(\$ millions)
Total assets	1,341
Defined benefit	1,341
Employer contributions	na
Benefit payments	na

*as of Oct. 31

In-house assets:	
Equities	76
Fixed income	1,246
Short term	19
Asset mix:	
Stocks	5.7%
Bonds	92.9%
Cash equivalents	1.4%

The annual Pensions & Investments Performance Evaluation Report will be published in the Feb. 23 issue of *Pensions & Investment Age*.

Public Employees' Retirement Association of New Mexico

Santa Fe, N.M.

	(\$ millions)
Total assets	1,243
Defined benefit	1,243
Employer contributions	94
Benefit payments	64

Alternative investments:	
Real estate equity	15
Mortgages	45
Mortgage-backed securities	130
Asset mix:	
Stocks	31.8%
Bonds	40.9%
Cash equivalents	12%
Real estate equity	1.2%
Mortgages	3.6%
Mortgage-backed securities	10.5%

New York Life Insurance Co.

New York, N.Y.

	(\$ millions)
Total assets	1,317
Defined benefit	1,196
Profit-sharing	71
Thrift or savings	26
401(k)	24
Employer contributions	0
Benefit payments	35

In-house assets:	
Equities	35
Fixed income	1,044
Other	64
Alternative investments:	
Real estate equity	31
Asset mix:	
Stocks	3.1%
Bonds	2.9%
Real estate equity	2.7%
Annuities	91.3%

The directory of investment advisers will run May 25.

THE NOMURA SECURITIES CO., LTD. BABCOCK & BROWN, INC.

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Police and Firemen's Disability & Pension Fund of Ohio

Columbus, Ohio

	(\$ millions)
Total assets	2,237
Defined contribution	2,237
Employer contributions	155
Benefit payments	183

In-house assets:	
Fixed income	1,293
Short term	147
Passive investments:	
Indexed stocks	104
Alternative investments:	
Venture capital	10
Real estate equity	69
Mortgage-backed securities	311
Asset mix:	
Stocks	27.6%
Bonds	46%
Cash equivalents	7%
Real estate equity	3.3%
Mortgage-backed securities	14.1%
Other	2%

School Employees Retirement System of Ohio

Columbus, Ohio

	(\$ millions)
Total assets	1,854
Defined benefit	1,854
Employer contributions	207
Benefit payments	183

In-house assets:	
Equities	106
Fixed income	756
Short term	24
Other	271
Passive investments:	
Indexed stocks	480
Alternative investments:	
Venture capital	15
Real estate equity	193
Mortgages	79
Mortgage-backed securities	321
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	31.6%
Bonds	22.7%
Cash equivalents	13%
Real estate equity	10.4%
Mortgages	4.2%
Mortgage-backed securities	17.3%
Venture capital	0.8%

Oklahoma Teachers' Retirement System

Oklahoma City, Okla.

	(\$ millions)
Total assets	1,590
Defined benefit	1,590
Employer contributions	125
Benefit payments	186

In-house assets:	
Short term	239
Alternative investments:	
Mortgage-backed securities	95
Asset mix:	
Stocks	20%

Bonds	59%
Cash equivalents	15%
Mortgage-backed securities	6%

Central Pension Fund of the International Union of Operating Engineers and Participating Employers

Washington, D.C.

	(\$ millions)
Total assets	1,515
Defined benefit	1,515
Employer contributions	88
Benefit payments	65

Passive investments:	
Indexed stocks	346
Indexed bonds	459
GICs	125
Alternative investments:	
Mortgages	70
Mortgage-backed securities	120
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	27.5%
Bonds	47.8%
Cash equivalents	2.6%
Mortgages	6.1%
Mortgage-backed securities	7.8%
GICs	8.2%

Owens-Illinois

Toledo, Ohio

	(\$ millions)
Total assets	1,875
Defined benefit	1,625
Defined contribution	250
Employer contributions	5
Benefit payments	100

In-house assets:	
Equities	150
Passive investments:	
Indexed stocks	36
Indexed bonds	44
Alternative investments:	
International equities	208
International bonds	47
Venture capital	30
Real estate equity	162
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y
Asset mix:	
Stocks	68%
Bonds	16%
Cash equivalents	6%
Real estate equity	10%

Pan American World Airways Inc.

New York, N.Y.

	(\$ millions)
Total assets	1,307
Defined benefit	546
Defined contribution	761
Employer contributions	130
Benefit payments	90

Passive investments:	
Dedicated/immunized	90

GICs	27
Alternative investments:	
International equities	35
Asset mix:	
Stocks	42%
Bonds	10%
Cash equivalents	16%
GICs	2%
IPGs	30%

J.C. Penney Co. Inc.

New York, N.Y.

	(\$ millions)
Total assets	2,356
Defined benefit	987
Defined contribution	1,369
Employer contributions	31
Benefit payments	108

Passive investments:	
Indexed stocks	41
Alternative investments:	
International equities	80
Venture capital	15
LBOs	10
Real estate equity	103
Mortgage-backed securities	5
Hedging devices:	
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	73.5%
Bonds	13.9%
Cash equivalents	0.4%
Real estate equity	10.4%
Mortgage-backed securities	0.5%
Other	1.3%

Philadelphia Municipal Pension Fund

Philadelphia, Pa.

	(\$ millions)
Total assets	1,358
Defined benefit	1,358
Employer contributions	146
Benefit payments	180

In-house assets:	
Short term	72
Other	46
Alternative investments:	
Venture capital	2
Mortgage-backed securities	6
Asset mix:	
Stocks	42%
Bonds	49.2%
Cash equivalents	5.3%
Mortgage-backed securities	0.4%
Other	3.1%

Philip Morris Inc.

New York, N.Y.

	(\$ millions)
Total assets*	1,524
Defined benefit	1,023
Profit-sharing	501
Employer contributions	64
Benefit payments	na

*As of June 30, 1986

Alternative investments:	
International equities	93
Real estate equity	16
Asset mix:	
Stocks	49%
Bonds	21%
Cash equivalents	9%
Real estate equity	1%
GICs	14%
International equity	6%

PPG Industries Inc.

Pittsburgh, Pa.

	(\$ millions)
Total assets	1,476
Defined benefit	926
Thrift or savings	503
401(k)	47
Employer contributions	27
Benefit payments	67

Passive investments:	
Indexed stocks	30
Dedicated/immunized	330
GICs	8
Alternative investments:	
International equities	48
Hedging devices:	
Stock index futures	Y
Asset mix:	
Stocks	49%
Bonds	44%
Cash equivalents	6%
GICs	1%

The Board of Pensions of the Presbyterian Church (U.S.A.)

Philadelphia, Pa.

	(\$ millions)
Total assets	1,750
Defined benefit	1,750
Employer contributions	56
Benefit payments	50

In-house assets:	
Short term	17
Passive investments:	
Indexed stocks	251
Indexed bonds	110
GICs	275
Alternative investments:	
International equities	117
International bonds	10
Real estate equity	34
Mortgage-backed securities	50
Hedging devices:	
Fixed-income futures	Y
Asset mix:	

Stocks	56%
Bonds	22%
Cash equivalents	1%
Real estate equity	4%
Mortgage-backed securities	3%
GICs	14%

Raytheon Co.

Lexington, Mass.

	(\$ millions)
Total assets	1,840
Defined benefit	1,500
Defined contribution	30
Profit-sharing	10
401(k)	300
Employer contributions	100
Benefit payments	40

Passive investments:	
Indexed stocks	400
Dedicated immunized	320
Alternative investments:	
Real estate equity	60
Asset mix:	
Stocks	67%

Funds investing in venture capital (\$ millions)

Fund	Assets
American Telephone & Telegraph Co.	316
U S WEST Inc.	200
Washington State Investment Board	190
Minnesota State Board	144
Michigan State Employees	130
Southwestern Bell Corp.	100
Hewlett-Packard	92
GTE Corp.	90
New York State Common Fund	90
Oregon Employees Retirement System	90
Los Angeles County	80
Boeing Co.	75
University of California	75
Pennsylvania School Employees	72
Pennsylvania State Employees	66
Sears Roebuck & Co.	64
Ameritech	60
Chicago Employees	60
Hughes Aircraft Co.	60
Wisconsin Investment Board	60
Exxon Corp.	58
Aluminum Co. of America	50
Ford Motor Co.	50
San Francisco Employees	50
Allied-Signal Inc.	45
New York State Teachers	45
Atlantic Richfield	44
LTV Corp.	41
FMC Corp.	40
Detroit Retirement Systems	36
Delta Air Lines Inc.	35
E.I. du Pont de Nemours & Co. Inc.	35
Ohio Public Employees	33
World Bank	32
Owens-Illinois	30
Westinghouse Electric Corp.	30
Xerox Corp.	30
Illinois Municipal Retirement Fund	28
Conoco Inc.	27
United Technologies Corp.	26
Delaware State	25
Massachusetts PRIT	24
Dow Chemical Co.	23
General Foods Corp.	22
Standard Oil Co.	22
Iowa Public Employees	20
TRW Inc.	20
Utah State Retirement Board	20
Armco Inc.	19
Grumman Corp.	19
RJR Nabisco	18
Illinois State Board	16
Ohio Teachers Retirement System	16
Dart & Kraft Inc.	15
J.C. Penney Co. Inc.	15
Ohio School Employees	15
Deere & Co.	14
Illinois Teachers	14
National Intergroup Inc.	14
Nevada Public Employees	14
Southern California Edison	14
Colorado Public Employees	10
Minnesota Mining & Manufacturing Co.	10
Ohio Police and Fire	10
Houston City, Fire and Police	9
Eli Lilly and Co.	8
Unocal Corp.	7
Honeywell Inc.	6
Inland Steel Industries Inc.	5
NYNEX Corp.	4
Continental Can Co.	3
Philadelphia Municipal	2
Massachusetts State Employees	1
Presbyterian Church U.S.A.	1
Rhode Island State & City	1
Total	3,335

Funds investing in oil and gas (\$ millions)

Fund	Assets
American Telephone & Telegraph Co.	247
GTE Corp.	145
Minnesota State Board	68
Southwestern Bell Corp.	50
U S WEST Inc.	50
Episcopal Church Pension Fund	40
Exxon Corp.	35
Xerox Corp.	25
Caterpillar Inc.	24
Allied-Signal Inc.	20
Hughes Aircraft Co.	20
USX Corp.	20
Textron Inc.	15
Honeywell Inc.	14
Eastern Air Lines & Pilots	10
Monsanto	10
United Technologies Corp.	10
Armco Inc.	9
Grumman Corp.	9
Atlantic Richfield	8
ITT Corp.	6
Tennessee Valley Authority	2
Total	837

Treasury management: Aug. 10

Profiles

Bonds	28%
Cash equivalents	1%
Real estate equity	4%

State of Rhode Island Retirement System and Municipal Employees Retirement Fund

Providence, R.I.

(\$ millions)	
Total assets*	1,483
Defined benefit	1,483
Employer contributions	17
Benefit payments	22

*as of June 30, 1986

In-house assets:	
Short term	227
Other	1
Alternative investments:	
Venture capital	1
Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	39.5%
Bonds	58.9%
Cash equivalents	1.6%

The Southern Co. (Southern System Pooled Trust)

Atlanta, Ga.

(\$ millions)	
Total assets	2,060
Defined benefit	1,586
Defined contribution	474
Employer contributions	84
Benefit payments	39

Passive investments:	
Dedicated immunized	195
GICs	53
Alternative investments:	
Real estate equity	9
Asset mix:	
Stocks	62%
Bonds	18%
Cash equivalents	16%
Real estate equity	1%
GICs	3%

Annuity Board, Southern Baptist Convention

Dallas, Texas

(\$ millions)	
Total assets	1,767
Defined benefit	679
Defined contribution	1,088
Employer contributions	na
Benefit payments	48

In-house assets:	
Short term	10
GICs	605
Real estate	60
Passive investments:	
GICs	605
Alternative investments:	
Real estate equity	29
Mortgages	31
Mortgage-backed securities	90
Asset mix:	
Stocks	23%
Bonds	25%
Cash equivalents	8%
Real estate equity	2%
Mortgages	2%
Mortgage-backed securities	5%
GICs	35%

Southern California Edison Co.

Rosemead, Calif.

(\$ millions)	
Total assets	1,756
Defined benefit	1,027
401(k)	498
ESOP	231
Employer contributions	79
Benefit payments	129

Passive investments:	
Indexed stocks	47
GICs	101
Alternative investments:	
International equities	28
Venture capital	14
Real estate equity	11
Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y

Asset mix:	
Stocks	60%
Bonds	26%
Cash equivalents	3%
Real estate equity	1%
GICs	9%
Venture capital	1%

Southern California UFCW Unions and Food Employers

Cypress, Calif.

(\$ millions)	
Total assets	1,181
Defined benefit	1,181
Employer contributions	na
Benefit payments	60

In-house assets:	
Short term	154
Passive investments:	
Indexed stocks	52
Alternative investments:	
Real estate equity	12
Mortgage-backed securities	14
Hedging devices:	
Stock index futures	Y

Fixed-income futures	
Asset mix:	Y
Stocks	50.5%
Bonds	19.2%
Cash equivalents	27.8%
Real estate equity	1%
Mortgage-backed securities	1.5%

Southern New England Telephone Co.

New Haven, Conn.

(\$ millions)	
Total assets	1,375
Defined benefit	1,225
Thrift or savings	150
Employer contributions	29
Benefit payments	58

Passive investments:	
Indexed stocks	366
Alternative investments:	
International equities	96
Real estate equity	42
Mortgages	1
Mortgage-backed securities	5
Hedging devices:	
Stock options	Y

Funds using portfolio insurance (\$ millions)

Fund	Assets
Deere & Co.	2,200
Illinois Universities	2,146
Caterpillar Inc.	1,300
Episcopal Church Pension Fund	700
Trans World Airlines	634
Aetna Life & Casualty Co.	600
Bechtel Power Corp.	250
Honeywell Inc.	250
American Stores Co.	186
Westinghouse Electric Corp.	140
Conoco Inc.	130
New York State Teachers	50
International Paper Co.	25
Aluminum Co. of America	NA
General Electric Co.	NA
Teledyne	NA
United Technologies Corp.	NA
Virginia Retirement System	NA
Total	8,611

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Company

Title

Address

City

State Zip

Business Phone

Profiles

Stock index futures	Y
Asset mix:	
Stocks	66%
Bonds	25%
Cash equivalents	5%
Real estate equity	3%

Standard Oil Co.

Cleveland, Ohio

	(\$ millions)
Total assets	1,535
Defined benefit	1,022
Thrift or savings	470
401(k)	43
Employer contributions	125
Benefit payments	80

Passive investments:	
Indexed stocks	102
GICs	100

Alternative investments:	
International equities	50
Venture capital	22
Real estate equity	72

Asset mix:	
Stocks	50.8%
Cash equivalents	32.4%
Real estate equity	7.1%
GICs	9.7%

Sun Co. Inc.

Radnor, Pa.

	(\$ millions)
Total assets	1,856
Defined benefit	1,499
Defined contribution	59
401(k)	298
Employer contributions	53

Benefit payments	152
Passive investments:	
Indexed stocks	149
Indexed bonds	99
GICs	50

Alternative investments:	
International equities	231
Real estate equity	166
Mortgages	21
Mortgage-backed securities	41

Hedging devices:	
Stock options	Y
Bond options	Y
Stock index futures	Y
Fixed-income futures	Y

Asset mix:	
Stocks	51%
Bonds	24%
Cash equivalents	8%
Real estate equity	11%
Mortgages	1%
Mortgage-backed securities	2%
GICs	3%

Teamsters, New England Trucking Locals

Boston, Mass.

	(\$ millions)
Total assets*	1,265
Employer contributions	na
Benefit payments	na

*Source: Money Market Directory

Teledyne Inc.

Los Angeles, Calif.

	(\$ millions)
Total assets*	1,346
Defined benefit	1,346

Employer contributions	46
Benefit payments	na

*P&I Age estimate

In-house assets:	
Equities	808
Fixed income	404
Short term	134

Asset mix:	
Stocks	60%
Bonds	30%
Cash equivalents	10%

Tenneco Inc.

Houston, Texas

	(\$ millions)
Total assets	1,940
Defined benefit	1,256
Profit-sharing	1
Thrift or savings	621
ESOP	63
Employer contributions	0
Benefit payments	55

In-house assets:	
Equities	252
Fixed income	486

Passive investments:	
Indexed stocks	252
Stock index futures	Y

Asset mix:	
Stocks	49%
Bonds	47%
Cash equivalents	4%

Tennessee Valley Authority

Knoxville, Tenn.

	(\$ millions)
Total assets	2,028
Defined benefit	964
Defined contribution	964
Thrift or savings	100
Employer contributions	78
Benefit payments	70

Passive investments:	
Indexed stocks	240
Indexed bonds	61
Dedicated immunized	42
GICs	208

Alternative investments:	
Oil and gas	2
Real estate equity	23

Hedging devices:	
Stock options	Y
Asset mix:	
Stocks	28.5%
Bonds	39%
Cash equivalents	21.5%
Real estate equity	1.1%
GICs	9.9%

Texaco Inc.

White Plains, N.Y.

	(\$ millions)
Total assets	2,219
Defined benefit	1,274
Defined contribution*	945
Employer contributions	47
Benefit payments	172

*as of Nov. 30, 1986

Passive investments:	
Indexed stocks	163
GICs	23
Alternative investments:	
Real estate equity	60
Hedging devices:	
Stock options	Y
Stock index futures	Y
Asset mix:	
Stocks	36%
Fixed income	32%
Cash equivalents	25%
Real estate equity	5%
GICs	2%

Texas County & District Retirement System

Austin, Texas

	(\$ millions)
Total assets	1,271
Defined contribution	1,271
Employer contributions	75
Benefit payments	36

In-house assets:	
Fixed income	1,208
Short term	63

Alternative investments:	
Mortgage-backed securities	446
Asset mix:	
Bonds	60%
Cash equivalents	5%
Mortgage-backed securities	35%

Funds investing in LBOs (\$ millions)

Fund	Assets
Washington State Investment Board	560
Oregon Employees Retirement System	400
New York State Common Fund	380
Wisconsin Investment Board	200
GTE Corp.	180
Boeing Co.	150
TIAA-CREF	130
American Telephone & Telegraph Co.	82
Iowa Public Employees	75
Textron Inc.	70
United Technologies Corp.	70
Delta Air Lines Inc.	65
Michigan State Employees	65
Massachusetts PRIT	60
Hughes Aircraft Co.	50
Illinois State Board	50
Allied-Signal Inc.	45
Minnesota Mining & Manufacturing Co.	33
World Bank	33
Aluminum Co. of America	25
ITT Corp.	11
Grumman Corp.	10
J.C. Penney Co. Inc.	10
Armco Inc.	9
Eastern Air Lines & Pilots	5
National Rural Electric Co-op	5
Total	2,773

Texas Municipal Retirement System

Austin, Texas

	(\$ millions)
Total assets	1,350
Defined contribution	1,350
Employer contributions	na
Benefit payments	na

In-house assets:	
Fixed income	1,350
Asset mix:	
Bonds	100%

Trans World Airlines Inc.

Kansas City, Mo.

	(\$ millions)
Total assets	2,265
Defined benefit	1,094
Defined contribution	1,105
Thrift or savings	66
Employer contributions	51
Benefit payments	na

Portfolio insurance

634

In-house assets:

Equities

Fixed income

Short term

Passive investments:

Indexed stocks

GICs

Alternative investments:

International equities

Real estate equity

Hedging devices:

Stock index futures

Asset mix:

Stocks

Bonds

Cash equivalents

Real estate equity

GICs

Annuities

The cash management survey

will be published in the Nov. 2

issue.

Dedicated or immunized bond funds (\$ millions)

Fund	Assets
Teamsters Western Conference	4,502
Ameritech	3,000
Chrysler Corp.	2,357
Minnesota State Board	2,286
U S WEST Inc.	2,026
UMWA Health & Retirement Funds	1,600
Navistar International Corp.	1,425
Southwestern Bell Corp.	1,420
Westinghouse Electric Corp.	1,250
Caterpillar Inc.	1,181
Teamsters Central States	1,144
American Airlines	1,000
RJR Nabisco	592
Inland Steel Industries Inc.	450
FMC Corp.	432
Mobil Oil Corp.	420
Ford Motor Co.	400
Armco Inc.	381
McDermott International Inc.	365
PPG Industries Inc.	330
Raytheon Co.	320
Honeywell Inc.	306
Chicago Employees	300
National Intergroup Inc.	276
Hercules Inc.	253
Milwaukee City Employees	200
Southern Co.	195
Ohio Teachers Retirement System	155
Dow Chemical Co.	113
Nevada Public Employees	106
Boilermakers-Blacksmiths	98
El Lilly and Co.	92
Pan American World Airways Inc.	90
Unisys Corp.	84
United Methodist Church	75
Baltimore Employees	60
Tennessee Valley Authority	42
United Technologies Corp.	33
Total	28,350

Funds investing in GICs (\$ millions)

Fund	Assets
Ford Motor Co.	1,100
New York City Retirement Systems	888
Procter & Gamble Co.	864
Southern Baptist Convention	805
General Electric Co.	602
Detroit Retirement Systems	356
Halliburton Savings Plan	356
Aetna Life & Casualty Co.	351
Dart & Kraft Inc.	344
Honeywell Inc.	331
United Methodist Church	303
General Foods Corp.	275
Presbyterian Church U.S.A.	275
K mart Corp.	210
Tennessee Valley Authority	208
Allied-Signal Inc.	200
General Dynamics Corp.	192
Trans World Airlines	168
Boilermakers-Blacksmiths	152
National Rural Electric Co-op	147
Bakery & Confectionery Workers	135
ITT Corp.	127
International Operating Engineers	125
Hawaii State Employees	121
Hercules Inc.	119
Colorado Public Employees	118
Pacific Gas & Electric Co.	114
Inland Steel Industries Inc.	109
Southern California Edison	101
Metropolitan Life Insurance Co.	100
Standard Oil Co.	100
Martin Marietta Corp.	98
Ashland Oil Inc.	95
Delta Air Lines Inc.	90
Connecticut Trust Funds	73
Shell Oil Co.	73
Baltimore Employees	72
Mobil Oil Corp.	70
FMC Corp.	62
Dow Chemical Co.	54
Southern Co.	53
Travelers Insurance Co.	51
Bethlehem Steel Corp.	50
International Paper Co.	50
Sun Co.	50
American Airlines	45
Hewlett-Packard	36
Armco Inc.	34
Conoco Inc.	30
Navistar International Corp.	30
Pan American World Airways Inc.	27
Bechtel Power Corp.	25
Texaco Inc.	23
Alabama Retirement Systems	20
Indiana State Teachers	15
National Intergroup Inc.	12
Illinois Universities	10
Monsanto	10
PPG Industries Inc.	8
Teamsters Central States	7
Idaho Public Employees	4
United Technologies Corp.	4
Total	10,476

Profiles

Travelers Insurance Co.

Hartford, Conn.

	(\$ millions)
Total assets	1,553
Defined benefit	1,159
Thrift or savings	288

Funds using bond options

Aluminum Co. of America
Bechtel Power Corp.
Bell Atlantic Corp.
Chrysler Corp.
Conoco Inc.
Dart & Kraft Inc.
Delta Air Lines Inc.
E.I. du Pont de Nemours & Co. Inc.
Episcopal Church Pension Fund
General Electric Co.
Halliburton Savings Plan
Illinois Universities
International Paper Co.
Kansas Public Employees
Monsanto
Nevada International Corp.
Owens-Illinois
Pacific Gas & Electric Co.
Southern California Edison
Sun Co.
USX Corp.
Washington Investment Board

Funds using stock options

Aetna Life & Casualty Co.
Alabama Retirement Systems
Aluminum Co. of America
American Airlines
Atlantic Richfield
Bakery & Confectionery Workers
Baltimore Employees
Bechtel Power Corp.
Bell Atlantic Corp.
Caterpillar Inc.
Chicago Employees
Chrysler Corp.
Colorado Public Employees
Conoco Inc.
Dart & Kraft Inc.
Delta Air Lines Inc.
Dow Chemical Co.
Episcopal Church Pension Fund
Florida Board of Administration
GTE Corp.
General Electric Co.
Honeywell Inc.
Houston City, Fire and Police
Hughes Aircraft Co.
Idaho Public Employees
Illinois State Board
Illinois Universities
Inland Steel Industries Inc.
International Operating Engineers
International Paper Co.
J.C. Penney Co. Inc.
K mart Corp.
Kansas Public Employees
Los Angeles Fire and Police
Los Angeles Water & Power
Milwaukee City Employees
Monsanto
Nevada Public Employees
New Jersey Division of Investment
North Carolina Retirement Systems
Ohio School Employees
Ohio Teachers Retirement System
Oregon Employee Retirement
Owens-Illinois
Pacific Gas & Electric Co.
Pennsylvania School Employees
Rhode Island State & City
Sears Roebuck & Co.
Southern California Edison
Southern New England Telephone
Sun Co.
Tennessee Consolidated
Tennessee Valley Authority
Texaco Inc.
Travelers Insurance Co.
USX Corp.
Union Carbide Corp.
United Technologies Corp.
Utah State Retirement Board
Washington Investment Board
Westinghouse Electric Corp.
World Bank

401(k)	48
Other	58
Employer contributions	37
Benefit payments	49*

In-house assets:	
Equities	462
Fixed income	311
Short term	51
Other	729

Passive investments:	
Indexed stocks	30
GICs	51

Alternative investments:	
International equities	82
Real estate equity	70
Mortgages	24

Hedging devices:	
Stock options	Y
Stock index futures	Y

Asset mix:	
Stocks	44%
Bonds	5%
Cash equivalents	4%
Real estate equity	5%
Mortgages	2%
GICs	3%
Other	37%

TRW Inc.

Chagrin Falls, Ohio

	(\$ millions)
Total assets*	2,005
Defined benefit	1,834
Other	171
Employer contributions	11
Benefit payments	na

*Source: Money Market Directory

Alternative investments:	
International equities	140
Venture capital	20

Asset mix:	
Stocks	69%
Bonds	22%
Cash equivalents	8%
Venture capital	1%

United Methodist Pension Fund

Evanston, Ill.

	(\$ millions)
Total assets	2,416
Defined contribution	2,416

Employer contributions	160
Benefit payments	120

In-house assets:	
Fixed income	310
Passive investments:	
Indexed stocks	382
Dedicated/immunized	75
GICs	303

Alternative investments:	
Real estate equity	45
Mortgages	6

Asset mix:	
Stocks	56.8%
Bonds	13.1%
Cash equivalents	15%
Real estate equity	2%
Mortgages	0.1%
GICs	13%

Unocal Corp.

Los Angeles, Calif.

	(\$ millions)
Total assets	1,207
Defined benefit	853
Profit-sharing	354

Employer contributions	na
Benefit payments	200

Alternative investments:	
International equities	47
Venture capital	7
Real estate equity	45

Asset mix:	
Stocks	48%
Bonds	13%
Cash equivalents	12%
Real estate equity	5%
Annuities	21%
Other	1%

State of West Virginia

Charleston, W. Va.

	(\$ millions)
Total assets	1,230
Other	1,230
Employer contributions	na
Benefit payments	na

In-house assets:	
Fixed income	1,190
Short term	40

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Corporate funds dropped . . .

Continued from page 15

One other fund, Marathon Oil Co., Findlay, Ohio, disappeared because its assets are now reflected in the total of USX Corp., which assumed internal investment management of the fund in July.

Two of the remaining eight funds that dropped in rankings — Phillips Petroleum Co., Bartlesville, Okla., and Dresser Industries Inc., Dallas — terminated pension plans during the year ended Sept. 30.

Phillips recaptured more than \$400 million before taxes through a spinoff/termination of a more than \$1 billion plan. Dresser terminated a \$580 million salaried plan and four small plans during the year, recouping \$124 million.

The remaining six funds that dropped from the top 200 are: John Hancock Mutual Life Insurance Co., Boston; American Can Co., Greenwich, Conn.; Eaton Corp., Cleveland; Texas Instruments Inc., Dallas; North American Philips Corp., New York; and Kaiser Permanente Medical Care Program, Oakland, Calif.

Page Palmer, director of corporate finance at John Hancock, said the fund had been overfunded for several years and no contributions have been made. John Hancock, which last year was ranked at 192 with \$948 million, slipped to 213 and \$1,058 million.

American Can fell to 214 from 183, with \$1.05 billion, mainly because of the sale of a packaging subsidiary and the subsequent transfer of pension assets to the purchaser.

North American Philips slipped to 216 from 198; Kaiser Permanente, to 236 from 200; Texas Instruments, to 250 from 194; and Eaton, to 254 from 191.

While lower contributions account for several dropouts, large contributions and conservative actuarial assumptions pushed up many public and union funds.

Of the 12 funds new to the top 200, four were public — Pension Reserves Investment Trust, Boston; Delaware State Employees Retirement System, Dover; Wyoming Retirement System, Cheyenne; and Idaho Public Employee Retirement System, Boise — and three were union — National Pension Fund for Hospital and Health Care Employees, New York; Teamsters New England Trucking, Boston; and Southern California Food/Commercial Workers, Cypress.

The corporate funds that moved up were Abbott Laboratories, Abbott Park, Ill.; Hewlett-Packard, Palo Alto, Calif.; National Inter-group Inc., Pittsburgh; and GenCorp Inc., Akron, Ohio.

One corporate fund that is new to the top 200 and "new" to P&I Age's survey, is that of newly created Unisys Corp.

The largest fund absorbed as a result of a corporate merger was RCA, which was ranked 75 as of Sept. 30, 1985, with \$2.7 billion in employee benefit assets. When GE acquired RCA, GE retained its seventh-place ranking on the new list, and its total assets climbed to \$22.9 billion from \$15.8 billion a year ago.

Unisys Corp., the company that was born of Burroughs' acquisition of Sperry, took 70th place with \$3.9 billion. A year ago, Burroughs was ranked 234 and Sperry, 80.

Chicago-based Navistar International Corp., then named International Harvester Co., was ranked 180 with \$1.047 billion in the previous survey. Now it ranks 145 with \$1.655 billion.

James Love t, assistant to the treasurer at Navistar, attributed the higher ranking to the company's contribution of \$104.5 million worth of its common stock in December 1986 to its plan and the strong returns achieved on the plan's heavy fixed-income investments.

One fund — the Pension Reserves Investment Trust of Massachusetts — is new to P&I Age's

survey. The \$1.646 billion fund is a trust that invests the retirement assets of several Massachusetts communities and is part of the Massachusetts State Employees & Teachers Retirement System. It was established in 1983 and got its first allocation in 1984, part of an effort to curb unfunded liabilities statewide.

Executive Director Paul Quirk attributes the fund's high ranking to fast growth, strong returns and stepped-up funding by the Legislature.

Mr. Quirk said the fund now has four purchasing systems, which are communities that buy shares in PRIT, and 12 participating systems, which are towns that turn over all their assets for management and receive a share of the annual state appropriation.

The Hospital and Health Care Employees ranked 150 with \$1.6 billion in assets in the current survey, up from 257 with \$726 million. Frank Williams, director of finance and administration, attributed it to strong returns.

"We have had excellent performance backed by our aggressive managers, and we are growing very fast," he said.

At GenCorp, Rick Nelson, vice president-general investment funds, said growth and solid investment returns propelled the fund into the top 200. GenCorp was ranked 156, with \$1.525 billion in assets as of Sept. 30, from 201 with \$900 million a year earlier.

Dedications fall . . .

Continued from page 16

tions to be raised, the dedicated portfolios have enabled the fund to wipe out its unfunded liabilities for purposes of the 1980 Multiemployer Pension Plan Amendments Act, said Alan D. Biller, the fund's consultant and president of Alan D. Biller & Associates, Palo Alto, Calif.

That law caused employers leaving an underfunded plan to pay a portion of the funded liabilities, considered a severe disadvantage for multiemployer funds in attracting new contributing employers.

One of the few portfolios created by a top 200 fund last year was a \$100 million contingent immunized portfolio established by the \$2.05 billion Nevada Public Employees' Retirement System, Carson City.

A contingent immunized strategy combines active management with an minimum absolute rate of return over a set period.

An unusual dedication involved a plan awaiting regulatory approval for a spinoff/termination. In December 1985, Chicago-based FMC Corp. set up a \$400 million portfolio based on Treasury bond futures contracts to lock in a 9½% rate for annuities to cover accrued benefits in the plan. The contracts insured a good price for the annuities, said William H. Schumann, director-investments for FMC's \$1.64 billion in pension assets.

The \$7.07 billion Teamsters Central States, Southeast and Southwest Areas Pension Fund implemented a \$1.14 billion portfolio sometime during 1986, but fund officials were unable to provide additional details. Officials at Morgan Stanley Inc., New York, the fund's named fiduciary, declined to discuss the fund's investments.

Assets of several bond portfolios shrank, as assets were drawn off to pay benefits. At Armco Inc., Middletown, Ohio, its immunized bond portfolio declined to \$381 million as of Sept. 30, from \$394 million the year before.

"Our assets did decline, and that's by design," explained Dennis Furey, general management-investment management. The internally managed portfolio was created in July 1984 with \$350 million in assets.

While Armco locked in a high interest rate at that time, immunization is less attractive now, Mr. Furey said.

A few portfolios were unwound during 1986. For example, Chevron Corp., San Francisco, unwound two dedicated portfolios valued at \$593 million Sept. 30, 1985, that it had inherited from the Gulf Corp. pension fund after Chevron acquired Gulf.

Chevron "never intended" to keep the portfolios, said R.L. Norman, manager-financial analysis.

Similarly, Allied-Signal Inc., Morris Township, N.J., sold off a \$1 billion dedicated bond portfolio inherited from the Signal Co. pension plan, which was merged into the \$6.6 billion Allied master trust.

Despite the lack of interest on the part of pension executives in setting up new portfolios, several money managers said they hope the Financial Accounting Standards Board's new pension accounting rules would generate new interest in the products as a way to tame fund volatility.

The new accounting rules have caused many pension executives to focus on protecting the "surplus" in their funds, to avoid having liabilities pop up on the bottom line.

Pension executives seeking to avoid wide swings in the value of their funds may seek to put a portion of the assets in a dedicated or immunized portfolio, said Len Santoro, vice president of Prudential Fixed Income Advisors, Newark, N.J.

Pension executives "may want to match liabilities with assets," such as long-term bonds, in the future, noted Samuel "Spike" Thorn, managing director at Scudder, Stevens & Clark, New York. "That ain't happening now," he added.

Fixed-income futures

Alaska State Retirement Systems
Allied-Signal Inc.
Aluminum Co. of America
Amoco Corp.
Ashland Oil Inc.
Atlantic Richfield
Bechtel Power Corp.
Bell Atlantic Corp.
Boeing Co.
Caterpillar Inc.
Chevron Corp.
Chrysler Corp.
Conoco Inc.
Dart & Kraft Inc.
Deere & Co.
Delaware State
Delta Air Lines Inc.
E.I. du Pont de Nemours & Co. Inc.
Episcopal Church Pension Fund
FMC Corp.
Florida Board of Administration
Ford Motor Co.
GTE Corp.
General Electric Co.
Goodyear Tire & Rubber Co.
Halliburton Savings Plan
Illinois Teachers
Illinois Universities
International Paper Co.
Kansas Public Employees
Minn. Mining & Manufacturing Co.
Monsanto
Navistar International Corp.
Ohio Teachers Retirement System
Owens-Illinois
Presbyterian Church U.S.A.
RJR Nabisco
S. Calif. Food/Commercial Workers
Southern California Edison
Sun Co.
UMWA Health & Retirement Funds
USX Corp.
Virginia Retirement System
Washington Investment Board
Wisconsin Investment Board
World Bank

The P&I Age methodology

The information on employee benefit funds contained in this issue was developed in several stages.

Questionnaires were sent to the more than 1,500 funds in *Pensions & Investment Age's* data base. From the completed questionnaires and follow-up telephone calls, the top 200 and top 1,000 funds were identified.

The more detailed information contained in the profiles of the 200 largest funds (beginning on page 28) was obtained from the completed questionnaires, interviews with fund officials and articles published in *P&I Age*.

In most cases, the information reflects fund operations as of Sept. 30, 1986.

Where no information was available from the fund, statistics were taken from the 1987 Money Market Directory of Pension Funds and Their Investment Managers.

In the tables accompanying the profiles, NA (not available) was applied to funds that had less than \$1 million allocated to the particular investment as well as to funds that could not provide a breakout of assets but are known to invest in those areas. Dollar amounts in all charts were rounded to the nearest million.

Stock index futures

Aetna Life & Casualty Co.
Alaska State Retirement Systems
Allied-Signal Inc.
Aluminum Co. of America
American Stores Co.
American Telephone & Telegraph
Armco Inc.
Atlantic Richfield
Bechtel Power Corp.
Bell Atlantic Corp.
Boeing Co.
Caterpillar Inc.
Chrysler Corp.
Commonwealth Edison Co.
Conoco Inc.
Dart & Kraft Inc.
Deere & Co.
Delaware State
Delta Air Lines Inc.
Dow Chemical Co.
E.I. du Pont de Nemours & Co. Inc.
Episcopal Church Pension Fund
Exxon Corp.
FMC Corp.
Florida Board of Administration
Ford Motor Co.
GTE Corp.
General Electric Co.
General Foods Corp.
Goodyear Tire & Rubber Co.
Honeywell Inc.
Hughes Aircraft Co.
ITT Corp.
Illinois Teachers
Illinois Universities
International Paper Co.
J.C. Penney Co. Inc.
K mart Corp.
Kansas Public Employees
Minn. Mining & Manufacturing Co.
Minnesota State Board
Monsanto
Oregon Employees Retirement
Owens-Illinois
PPG Industries Inc.
S. Calif. Food/Commercial Workers
Sears Roebuck & Co.
Southern California Edison
Southern New England Telephone
Sun Co.
Teamsters Central States
Tenneco Inc.
Texaco Inc.
Trans World Airlines
Travelers Insurance Co.
U S WEST Inc.
USX Corp.
Union Carbide Corp.
United Technologies Corp.
Virginia Retirement System
Washington Investment Board
Westinghouse Electric Corp.
World Bank

Alternative investments:

Mortgages	38
Mortgage-backed securities	18
Asset mix:	
Bonds	92%
Cash equivalents	3.5%
Mortgages	3%
Mortgage-backed securities	1.5%

The World Bank

Washington, D.C.	(\$ millions)
Total assets	2,200
Defined benefit	2,200
Employer contributions	65
Benefit payments	29
Passive investments:	
Indexed stocks	505
Alternative investments:	
International equities	466
International bonds	134
Venture capital	32
LBOs	33
Real estate equity	55
Mortgages	20
Mortgage-backed securities	155
Hedging devices:	
Stock options	Y
Stock index futures	Y
Fixed-income futures	Y

Asset mix:

Stocks	61%
Bonds	21%
Cash equivalents	5%
Real estate equity	3%
Mortgages	1%
Mortgage-backed securities	7%
Venture capital	2%

Xerox Corp.

Stamford, Conn.	(\$ millions)
Total assets	2,318
Defined benefit	192
Defined contribution	1,755
Thrift or savings	371
Employer contributions	87
Benefit payments	100

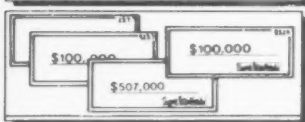
Alternative investments:

International equities	139
International bonds	12
Venture capital	30
Oil and gas	25
Real estate equity	204
Mortgage-backed securities	18
Asset mix:	
Stocks	65.6%
Bonds	7.9%
Cash equivalents	15%
Real estate equity	10.5%
Mortgage-backed securities	1%

Cash Management

Account monitoring aided

Cash accounts



JACKSONVILLE, Fla. — Alliance Mortgage Co. recently decided to use a microcomputer-based product to monitor the daily activity in 12 key accounts, said Marcus Turko, assistant vice president and manager of treasury operations at Alliance.

Mr. Turko said Alliance chose the product, offered by Florida National Bank, Jacksonville, to facilitate treasury operations.

"We, in order to manage our daily borrowings and our daily activity, need to see the activity in these key accounts," he said.

The 12 accounts — in New York, Jacksonville and Charlotte, N.C. — were selected because of their size and as a means of controlling cost.

"It would be too cost prohibitive to put every account on there," said Mr. Turko. "We're just talking about the big ones with a lot of activity."

He declined to release the total number of bank accounts or figures on the company's borrowing activity.

Mr. Turko also said the product,

called Florida MicroLink, enables him to initiate wire transfers and credits via the automated clearing house network without having to make a separate call to the bank.

Dividend capture set

CINCINNATI — Seeking higher yields over money-market instruments, Eagle-Picher Industries Inc. hired three managers to run dividend capture programs for \$30 million in idle corporate cash, said Joshua Adams, assistant treasurer.

Hired were Conner Capital Corp., Summit, N.J.; Gateway Investment Advisers Inc., Cincinnati; and Paramount Capital Group Inc., New York. Each will run separate accounts of \$10 million each, he said.

Mr. Adams said the money is coming from Eagle-Picher's account with Schroder Capital Management International, New York. Schroder will still retain about \$15 million to run in Eagle-Picher's corporate cash, he added. Schroder has run the company's corporate cash "off and on for three years," he said. Most of Schroder's investments are in money market instruments.

In addition, Mr. Adams said Eagle-Picher runs about \$5 million in corporate cash in-house in a portfolio of repurchase agreements.

Continued on page 82

Disbursement disagreement

2% cost hike doesn't hit cash managers' estimate

By Chuck Paustian

The cost of controlled disbursement accounts has increased far less than generally perceived by corporate cash managers, a recent study shows.

Statistics collected by Phoenix-Hecht Inc. researchers in Research Triangle Park, N.C., show the cost of a standard package of controlled disbursement services increased slightly more than 2% during 1986.

That increase differs significantly from the findings of an earlier Phoenix-Hecht survey of corporate cash managers, which revealed the executives believed banks had increased their prices between 12% and 15% last year.

The Phoenix-Hecht research also showed money center banks tend to charge more for their controlled disbursement accounts than both major regional banks and smaller banks.

The research, based on a universe of 200 banks representing 205 sites, asked banks to price a standard package of services that disbursed 5,000 checks per month.

The data showed the median

price for disbursements increased 2.1% to \$1,090 per month during 1986.

Forrest Johnson, senior vice president of Phoenix-Hecht, said the increase primarily was because of inflationary increases in the costs incurred by banks to provide controlled disbursement capability.

According to the Phoenix-Hecht data, the largest component of bank pricing is the per item charge for checks paid. This charge represents 57% of total cost for an account disbursing 5,000 checks per month.

The data showed this charge remained virtually unchanged during 1986. The median per item charge remained at 14 cents, while the mean charge increased to 14.2 cents per item from 13.9 cents per item.

The controlled disbursement maintenance charge also remained about the same during 1986. The median maintenance charge, \$112.50, increased 2% from the previous year while the mean maintenance charge, \$131.77, remained unchanged.

Mr. Johnson said the faulty perception on the part of cash managers is the result of their

focus on increases or decreases in compensating balances rather than specific bank fees.

"If interest rates drop 10%, then the compensating balances are going to go up 10% even if the bank's prices remain the same."

"(Cash managers) don't get a bill as to what the fees actually are, they get a bill as to what type of balances they need to keep," Mr. Johnson said.

He said one way to eliminate this confusion would be to pay for bank services on a fee basis.

"A lot of things would be clearer if companies switched to fees from compensating balances, but there's no real move in that direction," said Mr. Johnson.

The research data also showed money center banks tended to charge more for their controlled disbursement services.

The data showed money center banks charged 116% of the national mean for controlled disbursement accounts. Major regional banks, however, charged 112% of the national mean while small and regional banks charged 92% of the national mean for controlled disbursement services.

Payden & Rygel Index of short maturity assets* (for month ended Dec. 31)

	December 1986	Quarter ended 12/31/86	Year to date	12 months ended 12/31/86	Yield level monthly change*
Unannualized total returns					
\$0-day					
U.S. Treasury bill	0.4299	1.2960	6.6548	6.6548	28
Domestic CD	0.4206	1.4062	7.1507	7.1507	43
Euro \$ CD	0.4710	1.4733	7.3003	7.3003	25
180-day					
U.S. Treasury bill	0.3958	1.3173	7.2204	7.2204	21
Domestic CD	0.3694	1.3516	7.4818	7.4818	30
Euro \$ CD	0.4185	1.4227	7.6405	7.6405	20
1-year					
U.S. Treasury note	0.3221	1.3461	8.2471	8.2471	19
2-year					
U.S. Treasury note	0.2785	1.6459	10.2192	10.2192	14

*Figures are unannualized total returns. Year-to-date and 12-month figures linked monthly. 90- and 180-day Treasury bill yield level changes on discount basis.

*Basis points.

Source: Payden & Rygel, Los Angeles

Dollar expected to make slight gain in '87

CLAREMONT, Calif. — Despite the recent sharp rise of the deutsche mark and yen against the dollar, Claremont Economics Institute is sticking by its forecast that the dollar will rise against the major currencies in 1987.

The Claremont forecast, compiled at the end of December and released in mid-January, predicts that by the end of 1987, the deutsche mark will fall to 2.25 marks per dollar from 2.01 marks last Dec. 30. But in recent days, the mark has moved up sharply, strengthening to 1.83 marks per dollar as of Jan. 20.

The forecast also predicts a fall in the yen to 190 yen per dollar by year end from 163 yen at the end of last December. But recently the yen has jumped, rising to 152.7 yen per dollar as of Jan. 20.

John Hekman, senior econo-

mist, suggested the dollar's recent fall was set off by a rise in oil prices and by administration hopes that the dollar has to fall to improve the trade deficit.

"We think that is a short-run view and the dollar will improve," he said.

He said Claremont holds that "exchange rates are set more by capital flows than trade flows, and the United States is the best place to invest."

The recently released Claremont forecast charts 19 currencies against the dollar.

Claremont notes the biggest risk to its outlook is the U.S. entering a recession early this year. Such news could drop the dollar 10% or so against the deutsche mark and Swiss franc. A recession would pose little "risk for the dollar against the yen because of the

Japanese recession."

Among other currencies, Claremont predicts that by December:

- **Canadian dollar** will remain virtually unchanged, rising slightly to \$1.37 Canadian per U.S. dollar from \$1.38 Canadian last December.

- **French franc** will fall to 7.65 francs per dollar from a recent 6.59 francs.

- **Pound sterling** will fall to \$1.25 per pound from a recent \$1.43 per pound.

- **Swiss franc** will fall to 1.98 francs per dollar from a recent 1.69 francs.

- **Dutch guilder** will fall to 2.60 guilders per dollar from a recent 2.28 guilders.

- **Italian lira** will fall to 1,644 lire per dollar from a recent 1,395 lire.

Continued on page 82

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Corporate Finance

Credit raters see upswing in downgrades

By Brad Rudin

Credit downgrades outnumbered upgrades at all five rating agencies last year, a development linked to corporate restructurings, low oil prices and weakness in real estate and agriculture.

Both Standard & Poor's Corp. and Moody's Investors Service, both in New York, reported the number of downgrades were a record for their agencies.

The avalanche of downgrades left questions about corporate America's ability to service its debt when the economy moves onto the downward slope of the business cycle.

"There will be severe borrower problems during the next recession," said Francis H. Schott, chief economist at The Equitable Life Assurance Society of the United States, New York. "In that sense there will be a day of reckoning. I'm absolutely convinced of that."

Of all the rating actions taken by Stan-

dard & Poor's in 1986, 71% were downgrades compared with 69% the year before. Downgrades accounted for 63% of the corporate rating changes at Moody's in 1986, while the figure for 1985 stood at 55%.

At Duff & Phelps Inc., Chicago, downgrades made up 59% of the agency's rating actions in 1986, down from 69% the preceding year. Lowered ratings accounted for 62% of the total number of rating actions taken by McCarthy, Crisanti & Maffei Inc., New York, in 1986, up from 45% in 1985.

Fitch Investors Service Inc., New York, reported the lowest proportion of downgrades to total actions in 1986, 51%. In 1985, downgrades accounted for 58% of total actions at Fitch.

The difference between the Fitch rating numbers and the data reported by the other agencies can be explained by looking at Fitch's client base, said Jack Vogel, rating committee chairman. "The companies that are Fitch clients are, in our view, better companies."

Experts differed in their evaluation of the 1986 credit rating changes, views that were colored by their economic outlook for 1987.

"We believe that we have at least two solid years of economic expansion ahead of us and that corporate earnings will continue to improve in 1987 and 1988," said Lawrence A. Kudlow, chief economist at Bear, Stearns & Co., New York.

"Debt leveraging risks will turn out to be prudent in most cases rather than imprudent," Mr. Kudlow continued. "Future returns are what these managers are betting on. I think they have good reason to make that bet."

Solomon B. Samson, a senior vice president at Standard & Poor's, offered a less optimistic view of the increased leverage taken on by U.S. corporations. "Clearly, what we're in store for is more defaults than what we've had. Clearly, that's reflected in the rating activity."

Debt taken on at this stage of the busi-

ness cycle is a source of concern, said M. Cary Leahey, senior economist at Shearson Lehman Brothers Inc., New York. "Obviously when you're in the fifth year of an economic expansion, you have to say to yourself that not too many expansions have lasted longer and clearly lower rated credit is more of a risk."

Even a continuation of the current modest rate of growth poses problems for some of the weaker credits, said James M. Griffin, corporate economist at Aetna Life and Casualty Co., Hartford, Conn.

Only an upturn in the economy can insulate the more vulnerable companies from default, he said.

"It's difficult to understand some of the projections that apparently underlie some of the deals in the junk-bond market," Mr. Griffin said. "You're really counting on a high tide to float all boats."

Improvements in the economy and reductions in the cost structure of many corpora-

Continued on page 84

New issues of corporate securities

Dec. 8, 1986 — Jan. 2, 1987

Issue date	Company	Amount (\$ mil.)	Type of security	Offering price Debt (%) Share (\$)	Gross spread as % offer price	Where traded (to list)	Managers
Debt							
12/12	California CARS Grantor Trust	514.22	Cert. Rec.	99.94%	.400	OTC	Salomon
12/17	Federal National Mortgage Assoc.	495.00	Mtg. Backed	86.30%	.724	OTC	SAL/BEAR/FBC/GS/MLCM/SLB*
12/17	GMAC 1986-G Grantor Trust	444.86	Cert. Rec.	99.60%	.402	OTC	First Boston/Merrill Lynch/Morgan Stanley/Salomon
12/18	ANAC Merger Corp.	400.00	Sr. Sub. Note	100.00%	3.500	OTC	Salomon
12/17	Fruehauf Holdings	310.00	Sr. Sub. Deb.	98.44%	3.500	NY	Merrill Lynch
12/16	Texas Utilities Electric Co.	300.00	First Mtg.	98.38%	.889	OTC	Morgan Stanley/Merrill Lynch/Salomon
12/12	Student Loan Marketing Assoc.	300.00	Notes	99.85%	.576	OTC	Morgan Stanley/Citicorp
12/11	Amoco Co.	300.00	Debs.	100.00%	.875	NY	Morgan Stanley
12/10	United Technologies Corp.	300.00	S.F. Debs.	98.13%	.892	OTC	Goldman, Sachs/Salomon
12/9	Kingdom of Denmark	300.00	Bonds	100.00%	.700	OTC	SAL/FBC/GS/MLCM/MS/SLB/SBH**
12/23	Mellon Financial Co.	250.00	Notes	100.00%	.250	OTC	Goldman, Sachs
12/24	MGM/UA Communications	250.00	Sub. Debs.	100.00%	3.000	OTC	Drexel Burnham Lambert
12/23	Tosco Corp.	150.00	First Mtg.	100.00%	3.500	NY/PC	Bear, Stearns
12/24	MGM/UA Communications	150.00	Sr. Sub. Note	100.00%	3.000	OTC	Drexel Burnham Lambert
12/22	Salomon Brothers Mortgage IV	101.00	Pass-thru	Market	Market	OTC	Salomon
12/23	Richardson Electronics	75.00	Cvt. Sub. Deb.	100.00%	2.750	OTC	Drexel Burnham Lambert
12/30	Shearson Lehman CMO	70.50	FNMA CMO	83.98%	.782	OTC	Shearson Lehman
12/30	Shearson Lehman CMO	69.20	FNMA CMO	57.75%	1.299	OTC	Shearson Lehman
12/30	Shearson Lehman CMO	60.00	FNMA CMO	95.59%	.445	OTC	Shearson Lehman
12/23	Seers Mortgage Securities	59.49	Pass-thru	Market	Market	OTC	Drexel Burnham Lambert
12/23	Guild Finance Corp.	41.33	FNMA CMO	99.84%	.776	OTC	PaineWebber/Kidder, Peabody
12/23	Guild Finance Corp.	38.00	FNMA CMO	100.00%	.500	OTC	PaineWebber/Kidder, Peabody
12/30	Shearson Lehman CMO	30.30	FNMA CMO	88.16%	.624	OTC	Shearson Lehman
12/31	Shearson Lehman CMO	28.82	FHLMC CMO	74.91%	1.000	OTC	Shearson Lehman
12/31	Shearson Lehman CMO	27.46	FHLMC CMO	94.69%	.528	OTC	Shearson Lehman
12/31	Shearson Lehman CMO	17.03	FHLMC CMO	86.16%	.754	OTC	Shearson Lehman
12/31	Shearson Lehman CMO	14.21	FHLMC CMO	61.13%	1.431	OTC	Shearson Lehman
Common Stock							
12/12	Union Carbide Corp.	517.50		\$22.40	3.56	NY/MW/PC	First Boston/Morgan Stanley
12/19	Navistar International Corp.	504.90		\$4.75	5.26	NY	Shearson Lehman/First Boston
12/8	British Gas PLC	319.60		\$19.18	2.84	IPO (NY)	Goldman, Sachs/Merrill Lynch/Prudential-Bache/Salomon
12/16	Buckeye Partners	240.00		\$20.00	6.90	IPO (NY)	Goldman, Sachs/Shearson Lehman
12/23	Equitable R.E. Shopping Centers	107.00		\$10.00	7.00	IPO (NY)	Shearson Lehman
12/18	Winchell's Donut Houses	90.00		\$18.00	7.00	IPO	Merrill Lynch/Dean Witter Reynolds
12/16	Bank of Boston	84.30		\$42.13	2.73	NY/BO	Salomon/PaineWebber
12/23	Falcon Cable Systems	80.00		\$20.00	8.00	IPO (AM)	Morgan Stanley/PaineWebber/Dean Witter Reynolds/Bear, Stearns
12/17	Georgia Gulf Corp.	78.00		\$19.50	6.51	IPO	Goldman, Sachs
12/11	Vista Chemical Co.	75.60		\$17.00	6.06	IPO	E.F. Hutton
12/10	Catalyst Energy Development Corp.	74.00		\$21.75	4.37	OTC	Drexel Burnham Lambert/Hanifen, Imhoff & Samford
12/16	Talman Home Federal Savings & Loan	70.20		\$8.50	6.82	IPO	Salomon/Bear, Stearns/Merrill Lynch/Shearson Lehman
12/29	Disc Technology Corp.	31.30		\$1.25	80.00	IPO	The Stuart-James Co.
12/24	Tri-Star Pictures	29.30		\$9.75	5.74	OTC	Allen & Co./First Boston/Merrill Lynch
12/23	Grundle Environmental Systems	12.00		\$8.00	7.00	IPO (AM)	Drexel Burnham Lambert/Oppenheimer (books)
12/23	Lowrance Electronics	6.40		\$8.00	7.23	IPO	Eppler, Guerin & Turner
12/22	Lakeland Savings and Loan	5.40		\$12.50	7.04	IPO	Ryan, Beck & Co.

Source: Securities Data Co., New York

Cert. Rec.: Certificates receivable

Mtg. Backed: Mortgage-backed securities

Sr. Sub. Note: Senior subordinated note

S.F. Debs: Sinking-fund debentures

FNMA CMO: FNMA-backed collateralized mortgage obligation

FHLMC CMO: FHLMC-backed collateralized mortgage obligation

Cvt. Sub. Deb.: Convertible subordinated debentures

Pass-thru: Pass-through securities

*Salomon/Bear, Stearns/First Boston/Goldman, Sachs/Merrill Lynch/Shearson Lehman

**Salomon/First Boston/Goldman, Sachs/Merrill Lynch/Morgan Stanley/Shearson Lehman/Smith Barney, Harris Upham

PC: Pacific Stock Exchange

NY: New York Stock Exchange

OTC: Over the Counter

IPO: Initial Public Offering

MW: Midwest Stock Exchange

AM: American Stock Exchange

BO: Boston Stock Exchange

Credit . . .

Continued from page 83

tions suggest a brighter future for corporate credit, said Samuel Gordon, a senior vice president at Moody's. The deterioration of credit quality has just about reached its end, he said. "I don't think we're going to break another record."

Moody's said the greatest number of downgrades came in the industrial sector, where the agency lowered the ratings of 128 companies. The lowered ratings affected \$65.2 billion of outstanding debt, according to a statement announcing Moody's 1986 credit data.

Mergers, acquisitions, leveraged buy-outs, treasury stock buybacks and "other actions of corporate management generally unrelated to fundamentals" affected about half the dollar amount of the debt, Moody's said.

"Corporate restructurings,

Corporate credit rating changes

	1986		1985	
	Up	Down	Up	Down
Duff & Phelps	64	91	53	116
Fitch Investors Service	42	43	33	45
McCarthy, Crisanti & Maffei Inc.	45	72	75	61
Moody's Investors Service*	142	246	124	153
Standard & Poor's Corp.	149	364	125	272

* Moody's figures show the number of companies with changed ratings and do not reflect multiple rating changes for a given company. Multiple rating changes are reflected in the figures given by the other four agencies.
Source: Data provided by the agencies

plunging energy prices and eroding business fundamentals in some basic industries were primarily responsible for 221 industrial ratings being reduced," Standard & Poor's announced in a

statement.

Duff & Phelps said it expected "a mixed bag of rating changes this year, with some major surprises. The wild card will be the extent of merger mania."

U.K. is seeking

By Marci Baker

GREENWICH, Conn. — The United Kingdom, following the path of the U.S. corporate financing marketplace, will continue to grow more sophisticated in the months ahead as British companies, led by multinationals, show increasing demand for more competitive and esoteric financial advice and products.

While traditional corporate finance products and services continue to garner the greatest demand, U.K. corporations increasingly are seeking newer, more technical types of products and services.

According to Greenwich Associates' 1986 U.K. corporate finance report, the greatest overall demand will be for merger, acqui-

sition or divestiture advice and interest rate swap services.

Forty-four percent of U.K. companies expect to tap merchant banks for swaps and mergers during 1987, but new demand — companies that plan to start using these services — is much greater for swaps.

The Greenwich report is based on interviews with executives at 431 U.K. companies.

Among companies that expect to seek mergers and acquisition or divestiture advice, the vast majority use the services now and/or expect to use them more in the future.

Among those needing swap services, about half of the demand will come from those that are planning to start using interest rate swaps.

Greenwich also projected a doubling of demand for interest rate futures contracts, and a tripling for interest rate caps or collars, Eurocommercial paper and Euronote issues.

But John Colon, a Greenwich associate, cautioned, "On absolute levels, demand is still relatively small," he said.

According to the report, overall demand for swaps and mergers will be greatest.

For interest rate caps or collars, 28% of companies will continue or begin using them in the months ahead; 23% expect to tap interest rate futures. Total demand for Eurocommercial paper and Euronote issues was 17% and 13%, respectively, according to the report.

The least total demand — 7% each — exists for leveraged buy-out and U.S. commercial paper services.

Mr. Colon suggested the demand for more esoteric financing instruments may stem from the relative thinness of the corporate debt market in the United Kingdom. "There's not a high volume of sterling issues in the U.K. Companies may be looking abroad for hedges," he said.

Demand for the range of merchant banking services by existing and new users will be strongest among multinationals or the largest companies in terms of sales.

Nearly two-thirds of multinationals are expected to be users of merger and acquisition services and about one-fifth expect to use them more this year.

At the same time, more than half the companies with annual sales in excess of \$1.49 billion expect to tap mergers and acquisition services, with about 20% of companies expecting to use those services more.

The greatest new demand should come from companies with sales between \$149 million and \$372.5 million where 6% responded that they planned to seek merger advice.

Multinationals will remain the most active users of interest rate swaps as well — 57% said they are existing or potentially new users of swaps.

Total demand for interest rate swaps is expected to range from one-quarter of the smallest companies to more than two-thirds of the largest.

Overall, about 20% of respondents said they plan to begin using interest rate swaps this year.

Demand for interest rate futures contracts should show strong growth from all types of companies.

One in four companies should be accessing these instruments in the months to come vs. one in 10 for current users.

Continued on page 85

Permanent Mortgage Financing
Arranged by Alex. Brown Realty Advisors

\$ 37,400,000

Participating Mortgage Financing
for

Union Trust Tower

Baltimore, Maryland

(a 380,000 square foot office building)

A Development of
Tremell Crow Company

The undersigned arranged this transaction

ALEX. BROWN REALTY ADVISORS

\$ 30,000,000

Participating Mortgage Financing
for

First National Bank Building

Enterprise Center

Jacksonville, Florida

(a 360,000 square foot office building)

A Development of
Faison Associates

The undersigned arranged this transaction

ALEX. BROWN REALTY ADVISORS

\$ 96,500,000

Participating Mortgage Financing
for

One James Center, Two James Center

Richmond, Virginia

(a 470,000 square foot office building)

and

(a 370,000 square foot office building)

A Joint Venture Development of
Faison Associates and CSX Resources

The undersigned arranged this transaction

ALEX. BROWN REALTY ADVISORS

\$ 31,600,000

First Mortgage Financing
for

Eight Penn Center

Philadelphia, Pennsylvania

(a 290,000 square foot office building)

On behalf of the borrowers:
The Equitable Life Assurance Company
of the United States
and
Donaldson Lufkin & Jenrette

The undersigned arranged this transaction

ALEX. BROWN REALTY ADVISORS



ALEX. BROWN REALTY ADVISORS

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